

WIN
£600
Worth of Prizes
only in the
EXPRESS
SUMMER
GIVE-AWAY
Page
58



COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- Fighter Bomber extra
- Pro-24 update
- Skidz put to the test

ST

- Hard disk price cuts
- ProShare-ST review
- Projectyle on trial

PC

- PC Tools evaluated
- Hypercard gameplay
- Colour laptops

ARCHIMEDES

- Spectrum emulator!
- Fireball II arrives

CPC

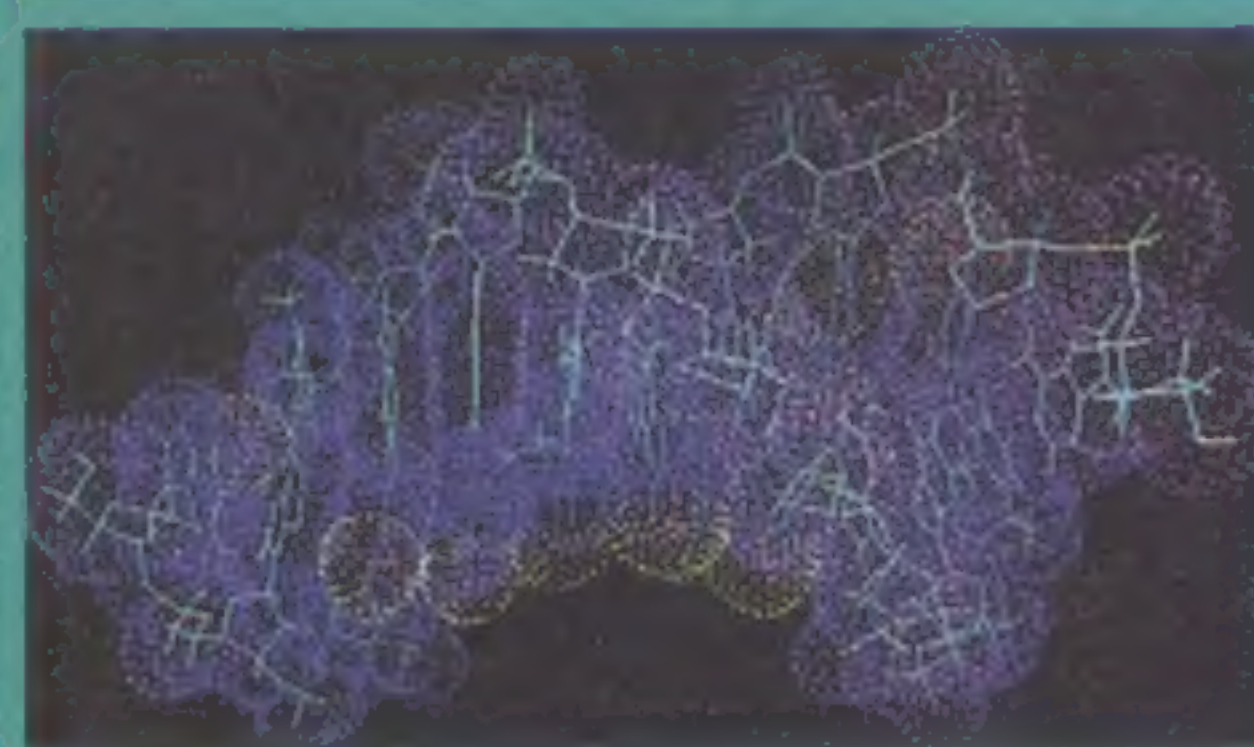
- Astro Marine Corps

Specialist Columns for:
BBC•C64•MSX•PCW•PD
QL•SAM•SPECTRUM•XE

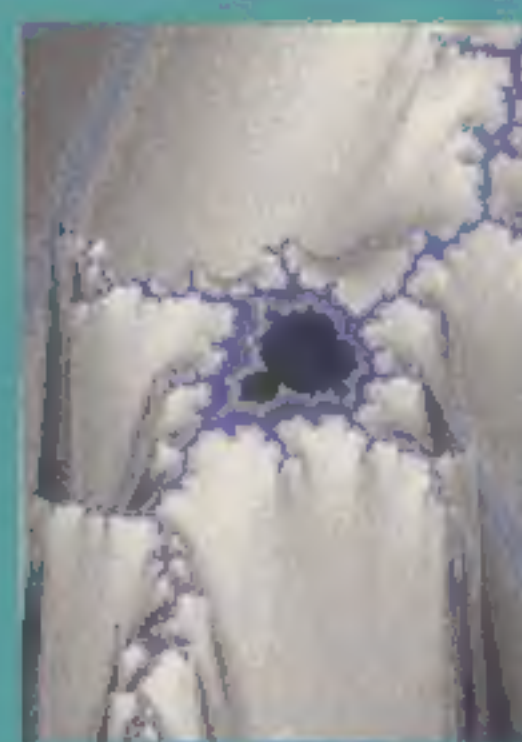
BARGAINS!

Thousands to be found in

**SHOPPING
EXPRESS**



Modern three-dimensional computing can model anything from a molecule to a motor car. Express visits the cutting edge of 3D
page 46



Mandel-Mountain for the Amiga - it's 3D, it's PD, so it's virtually free!
page 14

JAPAN'S CD AMIGA REVEALED



Is the Sanyo CD-X Viewer the prototype for CBM's new baby?
page 3

ULTIMATE CONSOLE ARRIVES!

But would you pay £200 for a game? pages 2 and 48



STARTING ON THE RIGHT LINES
Beginners guide to comms
page 52



9 770957 064004

22

CONTENTS

FEATURES

SOLID AIR 46

3D graphics so real
you think you can
touch them

NEO-GEO ON TEST 48

With games at £200 a
throw, Japan's latest
console reviewed

SHARE VALUES 49

Stocks and shares on
the ST

TOOLING UP 51

Review of PC Tools, the
PC utility package

GOING ON LINE 52

Beginner's guide to
communications

REGULARS

NEWS 2

COMMENT/ARCHIVE 7

THE PD COLUMN 43

COMPETITION 50

Win Amiga software
worth £600

TECH TIPS 54

LETTERS 56

SHOPPING
EXPRESS

BUYERS' GUIDE 19

Word processors

READER ADS 26

EXPRESS JOBS 36

EXPRESS SALES 39

YOUR MACHINE

AMSTRAD CPC 9

BBC MICRO 9

SPECTRUM 10

SAM COUPE 10

AMSTRAD PCW 10

MSX 10

COMMODORE 64 11

SINCLAIR QL 11

ATARI XE 11

ARCHIMEDES 11

PC COMPATIBLES 12

AMIGA 14

ATARI ST 16

Games for hottest new machine come in at £200

NEO-GEO CONSOLE ON SALE IN BRITAIN

Unofficial supplies of the Neo-Geo, Japan's latest console, are beginning to trickle into Britain through a variety of retail outlets at prices upwards of £400, with games costing around £200 each!

The Neo-Geo contains the same processor as an Amiga, ST or Macintosh – the Motorola 68000 – but running 50 per cent faster, and also has a Z80A dedicated purely to sound functions.

The machine was launched in Japan around five weeks ago, and some sources report initial stocks as having already sold out. It is not due for an official British launch until September, with distribution by Degaulle Marketing.

Degaulle's Luther Degaulle is being coy as to policy and price, restricting himself to the statement that he is "quietly confident" about the launch. It is believed that supplies in the autumn will be limited, with a wider availability in the new year when the software base should be considerably larger than the present six games.

In the meantime, a number of UK outlets have organised unofficial imports, mostly believed to be sourced in Hong Kong, and on a small scale sales are already brisk. Prices are well above Japanese levels (where the machine sells for around £260 and games for around £120) and are likely to alter rapidly as suppliers check each other's prices, jostle and attempt to undercut.



• Just part of a screen from Magician Lord, a 46Mb cartridge game costing £200.

Games fanatics who cannot wait for the anticipated lower-priced official machines and who are feverishly reaching for their wallets are advised to shop around (and keep their eyes on Shopping Express) for the latest prices and details of game availability. Check whether the machine on offer will run UK mains voltages or whether you will need to buy an additional power supply.

As some, if not all, of the machines reaching Britain are configured for the NTSC television standard, you should also check with your preferred supplier whether their Neo-Geos have been converted for the British PAL TV standard or will only run through an RGB monitor before making your purchase.

• For a full review of the Neo-Geo turn to page 48.

UK stockists

Known suppliers of the Neo-Geo in this country are:

• Supervision Electronics (0602 475151) has stocks at £450, games at £240 or machine-plus-game at £600.

• Telegames (0533 880445) had sold out at press time, but should have fresh stocks by now at £450 with games at £199.95.

• Shekhana (081-889 9412) has stocks at £475 with games at £225, or machine plus both games for £900.

• Cyber-Tech (0453 544582) has no stocks yet, but reckons to be offering machines in the very near future at £399 with games at £199.

CYBERFUNK IN ACTION



• This is a still from the latest video by Coldcut, who have started using Amigas and Archimedes to jazz up their music's visuals. The group have used the computers to make videos for all the tracks on their LP Some Like It Hot which will be released on tape and CD-Video. Coldcut use an Archie with a Pineapple digitiser and an Amiga with Vidi-Amiga, Sculpt-Animate 4D and Deluxe Paint to produce fast-moving scenes to match their brand of high energy dance music.



• Massive multisync monitor from Mitsubishi.

Monster monitor

A massive 29-inch monitor from Mitsubishi is aimed at multimedia applications.

The EUM-2915A will run off PCs, STs, Amigas and Macintoshes, and has detachable stereo speakers for better sound. In a true multimedia environment a wired remote control allows the user to switch from one source to another.

At £2,640 the EUM-2915A may be out of the range of the average pocket, but it should find a niche in the educational market place. More info from Mitsubishi on 0707 276100.

Interactive TV game puts you on the real life football pitch

A novel gaming system which allows TV viewers to interact with live sports transmissions is coming to the UK.

A Californian company, NTN Communications, has licenced its *National Football League* interactive game system to the BBC and the service should be up and running by the autumn.

■ In the States over 400 restaurants, bars and hotels provide the system free of charge to customers. Up to 20 users can play alongside live football, hockey and baseball games using hand-held, infra-red 'Playmaker' consoles.

Interactivity takes the form of viewers being able to amass points for correctly predicting the outcome of live moves resulting from 'dead-ball' situations. In the NFL football

game, for instance, viewers guess the direction, length and outcome of subsequent play, punch in their choice on the console and compete against fellow players - even in different cities.

A small monitor next to the TV updates the success of the outcomes predicted by the participants. Winners receive free trips abroad, replica trophies of major competitions and cash prizes.

In Britain, licensee VTV has already signed an agreement with the BBC and Whitbread Breweries to bring the system to pubs up and down the country. Chances are you'll be able to compete in the 1991 FA Cup competition from the comfort of your own local! ☺



- Sack Jim McMahon directly with National Football League.

Japanese magazine lifts the lid on Commodore-Sanyo joint venture

SANYO FIRST OFF THE BLOCKS WITH A CD-ROM AMIGA 500?

A combined CD-ROM/Amiga had already been developed in Japan as early as last August, Express can reveal.

The CD-X Viewer incorporates a Commodore Amiga A500 and Sanyo CD-ROM unit and is reported by Japanese magazine *PC Engine News* to have had the wholehearted support of Commodore in its manufacture and development.

Photographs in PCEN show a unit bearing a remarkable resemblance to an Amiga 2000 with a built-in CD-ROM unit. Indeed, close examination shows the keyboard to be that of an A2000 complete with A-keys signifying Amiga. The normal Amiga badges have simply been replaced by a Sanyo logo. The rear of the unit also features exactly the same I/O ports in the same order as the Amiga 500.

UNEXPECTED

The unexpected emergence of these details has given rise to speculation that Commodore's much-discussed 'Amiga Baby', due to be launched this weekend at the summer Consumer Electronics Show in Chicago, is in fact a combined Commodore-Sanyo project which started life with the CD-X Viewer prototype, built by Century Research.

Ironically, it was after seeing the Amiga at last summer's CES show that Japanese electronics wizards at the Century Research Centre built the CD-X Viewer.

Commodore US claimed no knowledge of the machine and referred Express to Commodore International, which said it was unable to comment. Because of international time differences, Commodore Japan had to be contacted by fax and had not responded by the time we went to press.

Surprisingly, Commodore's UK press office appeared to have heard of the machine, but denied that it was based on A500 technology. A PR spokesman

believed that the unit was "a development product based on Amiga A3000 technology" and intended as a point-of-sale unit.

But because the CD-X Viewer uses a 68000 chip, has 512K of RAM and all the screen resolutions and external ports are identical to an A500, it is thought that the point-of-sale machine is in fact another of Commodore's joint development projects with Sanvo for the Japanese market.

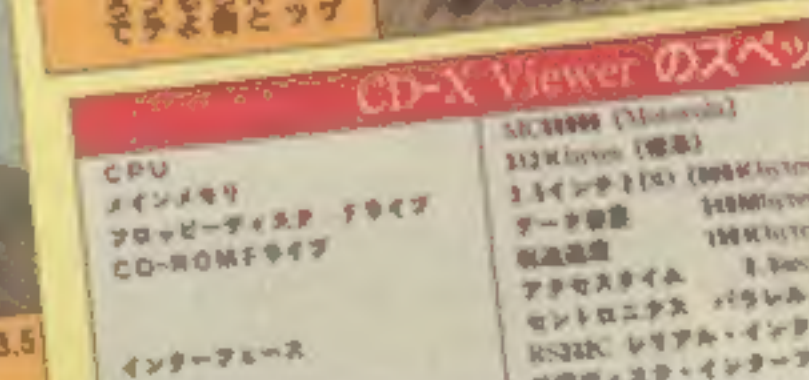
Also able to play standard audio CDs, the CD-X Viewer's CD-ROM unit offers 550Mb of data storage, an average access time of half a second and is designed to run conversions of popular arcade games from leading Japanese companies like Taito, Capcom, Sega and Konami. Such Japanese publishers already have the capacity to release CD conversions of games, as the PC Engine also features an add-on CD-ROM drive.

According to the machine's inventor, 'Nakamura (sic): "The Amiga is the world's leading games machine and we want to introduce as many titles to our home market for the first time. We see CD-ROM as the leading medium for the future".

• For full 'Amiga Baby' launch details see next week's Express.

A+CD-ROMの超マシン
開発されていたのだ!!

D GAMEで海外のゲームを紹介してるけど、そのほと
っていうパソコンのゲームなんだよね。このAMIGAは、
か機能も面白い。それ用に発売されるソフトもゲーム
とんでもないものばかりっていうモンスターマシン！
AMIGAには、セガ、タイトー、コナミ、カプコンな
あのメーカーが続々とアーケード機を移植してるのだ。
そのAMIGA版をベースにCD-ROMを搭載したスーパ
日本で作られてるっていう情報が入ってきた。さっそ
て見てもらったのが、この「CD-X Viewer」だ！
ROMを作ったのは、スパコンで科学技術省シミュレートシ
ROMを作ったりしているセンチュリリサーチセンターの
%。このマシンは、ここで作っているCD-ROMを低価格
なる機種として作られたもので、例えばデパートのプレイ
ンなんかに使えるように開発されたもののなのだ。
おにおうかがいした中村さんも、御自身がアメリカ駐在中か
JAファン。始めは、中村さんを中心とするスタッフの方がハン
で作っていたところ、三洋電機が製作協力、また、AMIGAの発
と米コモドール社も、このマシンを見て全面的に協力して
ることになったんだって。



* PC Engine News' report of the prototype CD Amiga.



Bomb run

Addicts of Activision's *Fighter Bomber* who have killed every enemy to be found will be pleased to hear of an expansion disk for the game.

Fighter Bomber Advanced Mission Disk adds 16 progressively more difficult missions to the original scenario and gives you choices of land and sea missions in a variety of military strike aircraft.

The advanced mission disk must be used in conjunction with the original *Fighter Bomber* disks and will be available for Amiga, ST and PC from July. The price has not yet been set. ■

- **Left: Fighter Bomber gets more missions.**

Manchester united with European bulletin boards

Manchester goes on line later this year with a £500,000 public bulletin board and local database called The Manchester Host.

The Host will carry local information such as flight times from Manchester Airport and a giant database of general information about the city. An electronic mail facility will be included and it will be self-financing.

Manchester plans to lease 'electronic workspace' to small companies, as well as offering fax and telex services.

As well as being targeted at industry and commerce, individuals will be able to subscribe for around £25 a month.

The Host will be run by Soft Solution, a London-based co-operative that will move north to run it. Soft Solution currently manages the UK base of the Geonet electronic mail system, which has been chosen as the ideal mechanism to carry Manchester's system.

Connection to Geonet will link The Manchester Host to similar systems around Europe, and with systems planned in

Holland, West Germany, Spain and Portugal, the wires could be buzzing across the continent.

Some £300,000 of the budget has come from the Government's urban programme with Manchester City Council finding the remainder.

Dave Carter, spokesman for Manchester City Council said: "We hope to have the E-mail up and running in a few months with the rest of the system following."

Manchester City Council is on 061-234 1259.

June ST and Amiga show

The ST and Amiga 16-Bit Computer Fair promises to be an event packed with launches and the organisers are hoping to attract 20,000 plus visitors.

New games and programs are promised from Core Design, Psygnosis, Horrorsoft and Soft Stuff, and there will be a live music workshop from The Deeper Domain.

Riverdene PDL will have an ST slide transfer system on sale at the show.

The 16-Bit Computer Fair will be held between June 28 and July 1 at the Royal Horticultural Halls in London.

Save our sphinx

Scientists have placed a computerised weather centre on the Sphinx's back in a bid to learn more about the effects of erosion on the limestone layers of the statue.

The £120,000 solar-powered station transmits incoming data on rainfall, wind direction and speed, humidity and pollutants to a computer a mile away.

The scientists hope that the results will enable them to develop ways to save the statue from erosion.

ST hard disk price cut

The rather strangely-named bdp Electronics has been appointed official suppliers of the Supra range of hard drives for the ST - and has immediately cut the prices.

The company has been appointed by Frontier Software and will supply drives ranging from 20Mb at £374 to 84Mb at £632.50. Further enquiries to 0383 881768.

Game over...

Killer Leonard Laws was executed in Texas last month - after spending several hours playing Nintendo video games.

Laws, aged 40, was sentenced to die in 1981 after brutally murdering two old people. His last wish was granted in line with Death Row tradition. After a hearty breakfast the murderer asked to be allowed to spend his last hours playing his favourite computer games - before a lethal injection was administered.

Fax service offers comms without the computer

MERCURY FACTS BY FAX SERVICE STARTS

A revolutionary means of gaining 24-hour, seven-day access to on-line information without the need for a computer or teletext TV was unveiled last week by Mercury Communications.

With Faxess, telephone users anywhere in the world can dial up information services and request data to be automatically and immediately faxed to the machine of their choice.

Mercury will act as network providers, with material being charged to users on a per-page basis by the information suppliers, in a similar way to view-data systems. With UK fax ownership currently topping half a million, the company expects Faxess to receive hundred of thousands of calls a day for news, business, travel and leisure information once the system is fully up and running.

Faxess draws on the new tone-dial telephone technology to enable users to



Part of a Faxess fax shown actual size.

punch in numbers in response to spoken menu options.

The requested information can take the form of graphs, photos and logos as well as text, and is delivered at a resolution of 200 dots per inch - a quality

Mercury claims to be close to the laser output of desktop publishing packages.

Described as a 'world first', the Faxess system consists of an automated switching centre 'staffed' by a female voice, which routes calls to information providers' mainframes where a Mercury unit allows the phone inquirer to interrogate that system.

Mercury claims the device 'can talk to any computer and relational database on the market'. The resulting information is re-routed back to your fax with even the most complex data taking less than two minutes to arrive.

Mercury has yet to reveal the names of companies likely to take up the service but is counting on revenue running into several millions. Reuters, British Rail, airline companies and financial services are those most likely to utilise it first.

If you have a fax you can try out Faxess on 081-419 0330.



Scenes from Bond's latest epic, taken from an ST.

Bond is back again

The Spy Who Loved Me is the latest in the 'game of the film of the book' series from Domark. This time it's up to Bond to plug around in the amphibious Lotus Esprit while trying to sort out the evil Karl Stromberg with malice aforethought.

In true 007 tradition, it's save the world from evil before time runs out, with a tension-building time limit before New York and Moscow are nuked out of existence. To complete the Bond scenario there's a beautiful Soviet agent with an unpronounceable name.

Available for PC, ST, Amiga, C64, Spectrum and Amstrad from September.

A600 machine will be 1Mb with Workbench 2

NEW AMIGA PLANNED FOR AUTUMN LAUNCH

After the recent launch of the A3000 and imminent launch of a CD-ROM machine, Amiga owners can look forward to yet another release this year.

Scheduled for September is the Amiga A600 – an upgrade to the A500 featuring 1Mb of RAM, the new Enhanced Chip Set and Workbench 2.

While rumours of an A600 have abounded for some time – indeed Express first ran the story last July – it's the release of the new Workbench for the A3000 which has begun to firm up speculation. Workbench 2 will be available in September and will run on existing A500s.

Steve Franklin, Commodore's UK boss, is on record as stating that an upgrade path for the A500 is on the



• Amiga: base model due for an autumn upgrade.

cards when at last year's PC Show he told Express "We have hopes for something exciting for the middle of next year, something fundamental to the Amiga".

But Commodore is also known to be keen on introducing a new enhanced

entry-level Amiga besides the CD machine. The A600 will fulfill that role, and industry sources expect an external CD-ROM drive to be made available so the machine can run the expected avalanche of CD games titles.

Spate of colour laptop launches

New colour screen techniques for laptops, including thin film technology (TFT), were unveiled at the Tokyo Business Show recently, as colour laptops began to reach the shelves in significant quantities.

NEC produced its most advanced laptop, the PC-9801 T Model F5, which attracted a lot of attention despite costing 1,150,000 yen (over £4,600). Whereas previous laptops have depended on super twist nematic (STN) colour screens, which are darker and less clear than those using traditional cathode ray tube technology, the NEC Model F5 uses a much superior colour liquid crystal and TFT to display eight colours.

It has an Intel 80386SX processor, and its standard 1.6Mb main memory can be expanded to 14.6Mb. There is a 40Mb hard drive with two 3.5-inch floppy drives. The keyboard is detachable from the main unit.

Seiko-Epson also unveiled a colour LCD laptop, the PC-386 LSC. This adopts an original metal insulator metal (MIM) active matrix colour LCD panel which can display 16 colours from a palette of 4,096. This machine is priced at 980,000 yen (just under £4,000) which makes it significantly cheaper than the NEC Model F5.

This machine is also built around an 80386SX and has a standard 640K main memory expandable to 8.6Mb. It has two built-in 3.5-inch floppy drives and both 20Mb and 40Mb hard drives are available as options.

Many observers believe TFT is essential to colour laptop screens and Hitachi demonstrated it on its own AT-compatible laptop, the HL500C. This uses an 80386SX, 1Mb memory and two 3.5-inch floppy drives.

Unlike the other laptops at the show, which are due to be released first in Japan, the HL500C will be aimed at the European market.

The bad news is a price of around 20,000 Deutschmarks (£7,600).



• Corporately test a SupersPort for free.

Test drive a Zenith PC

From June 6, potential buyers will be able to give any of Zenith Data Systems' portable computers a seven-day free 'test drive'.

As David Dury, the company's general manager, commented: "How many other manufacturers have enough confidence to mount a campaign of this nature? We know our portables are some of the best – we want users to know this too."

The offer is only open to companies with ten or more employees or a business registered for VAT.

Machines available for the 'test drive' are the SupersPort range – the SX (VGA), 286e (VGA), 286 (CGA) – and the MinisPort. There will also be a brand new addition to the range, to be announced on June 6.

The 'test drive' lasts from June 1 to July 31. Call the 24-hour freephone number 0800 800450 for details.

JACK'S BACK



• Bomb Jack, the classic arcade game of yesteryear, has been reissued for the Atari ST and Commodore Amiga at the budget price of £9.99. Encore is putting out the game, which you may remember involves flying around collecting bombs while avoiding strangely-shaped enemies. It will be in the shops on June 20.

Israeli challenge to US giants

After the US refused to export supercomputers to Israel for fear they would be used to design and produce nuclear weapons, Israeli university officials claim that their scientists are developing a system more powerful than anything the US can offer.

US spokeswoman for Technion, Israel's leading high-tech university, confirmed that Israel was looking to the US for funding of the project which will offer an alternative to the supercomputers offered by Cray and IBM. She said: "The writing's on the wall."

We have to go it on our own."

Brian Silver, a director of Technion, said that Israel had planned such research anyway but the US's refusal to export state-of-the-art supercomputers had given the project a strong push.

Table service

A hand-held computer that sends a gourmet's order to the kitchen while the waiter is still at the table has been announced by NCR in Chicago.

The 2750 hand-held order system uses a tiny radio transmitter to send the information to the kitchen.

At the end of the meal it can even print the bill.

NCR is promising to ship from next month, but the price could be a little hard to swallow – \$10,000 (about £6,100) for the base station, two terminals and a battery charger.



• One of the pirated Nintendo cartridges.

Nintendo set to fight pirates

Nintendo is preparing itself to fight an international battle against cartridge pirates as illegal multiple games cartridges become more common.

Howard Lincoln, Nintendo's senior Vice President, said: "We want to protect consumers for whom Nintendo means quality and value." He added that Nintendo would sue anyone who rents, sells or imports counterfeit Nintendo software.

The most common sort of copy is the multiple game cartridge. If you have or are offered one of these, you can be sure that it is an illegal copy as Nintendo do not make or licence any multiple game cartridges. ■



• NEC is now buying into CD software.

NEC buys into CD games

NEC, the Japanese computer giant with interests in everything from printers and PCs to the PC Engine, has bought a 15 per cent stake in Cinemaware – the American company with a reputation for advanced CD-ROM games development. NEC manufactures CD-ROM drives.

Cinemaware was responsible for *Defender of the Crown*, one of the very few CD-ROM games available. The company is currently working, with JVC, on *Lords of the Rising Sun*, again on CD-ROM and designed for the PC Engine.

The 15 per cent stake is rumoured to have cost NEC over \$1 million, but the chance to get in 'on the ground floor' is presumed to be worth it. Bob Jacob of Cinemaware commented that the deal with NEC gave his company an entry into "the largest captive market for CD-ROM in the world, which is NEC in Japan". ■

Satellite beams down your location to your car

NAVIGATION SYSTEM FITS ON DASHBOARD

Within a few weeks Japanese motorists will be finding their way around with a navigation system based on American military satellites.

The system was jointly developed by an American firm called Trimble and Pioneer – the Japanese electronics company. The device displays a map on a colour screen on the dashboard which pinpoints the car's position.

It relies on the US Government's Global Positioning System (GPS) which, when completed later this year, will consist of 24 satellites – each circling the earth every 12 hours. The US military can achieve an accuracy of 10 metres, but the Pentagon insists on downgrading the system for outsiders. Even so an accu-

racy of 100 metres can be achieved by anyone who has a receiver.

There are currently 12 GPS satellites in position offering navigation fixes for 14 hours a day. From June, Japanese motorists will be able to buy a decoder for 350,000 yen (£1,300) which will display their car's position on a 1:400,000 map on an LCD screen. The maps, which also show restaurants and hotels as well as roads, come on four optical disks which cover the whole of Japan and cost £40 each.

• In Britain two rival car navigation systems are about to be licensed, although neither uses satellite fixes. Trafficmaster, developed by General Logistics of Luton, uses an adaptation of a radio paging sys-

tem to give drivers instant traffic news. Information is gathered from infra-red sensors on motorway bridges and the system should be up and running by August.

A second system, Autoguide from GEC, relies on infra-red transmitters at traffic lights to communicate with the car's navigation system. It uses a digitised voice and an LCD screen and the roadside transceivers exchange information with another transceiver mounted in front of the car's rear-view mirror.

When fully operational the system 'Mission Control' will be able to warn drivers of traffic jams and road accidents ahead. However, although a pilot scheme is under way in London, it is not expected to come on-line for three years yet. ■

Microsoft mice are tested by being driven the equivalent of 50 miles across the table top, but a survey shows that average users would have discarded the computer before the mouse had been driven the distance.

The most mouse intensive user rolled their rodent a mere 60 feet per day. At this rate, it would take about 13 years to reach 50 miles.

An average user moved the mouse about 66 inches a day, and at this snail's pace, it would take a good 140 years to travel the 50 miles.

The most common mice have two buttons. In the survey, the lowest ratio of left to right clicks was 13:1 and that was with a graphics package that used the right button as a call function device.

Perhaps that may provide consolation to the users of the Apple Macintosh who must make do with a one-button mouse. ■

Mice on the move



• Microsoft's mouse is tested to last for 50 miles.

12-bit sampler for the ST

AVR's new Pro-Series 12 sampler is a plug-in cartridge with software which offers ST users 12-bit sampling, with samples replayable through a MIDI keyboard.

Along with *Drumbeat* and *MIDIplay* software, the package includes features such as fade in/out, echo, reverb, flange and filtering. On a standard 520ST sequences of around five seconds of audio, captured via phono leads, can be sampled and exported to the polyphonic drum and MIDI software for manipulation.

MIDIplay allows up to 128 samples to be sequenced across four voices. Pro-Series 12 costs £245. More info on 0582 457348. ■

Hacker nixed

The hacker who deleted valuable data from university computers and left childish taunts in its place has been convicted of causing malicious damage and remanded pending social reports.

Self-styled 'mad hacker' Nicholas Whiteley, a 21-year-old part-time computer consultant, penetrated databases at Hull and Bath universities and Queen Mary College London via the Joint Academic Network (JANET). He overloaded systems with data to stop them working and caused £25,000 worth of damage.

Whiteley carried out his six-month 'war' against academic computers using a copy of *The Hacker's Handbook* and an Amiga 1000. ■

COMMENT

The American bar room computer game system will make a welcome change from the usual anti-social alien bashing

America's interactive TV sports system (see page 3), with its bar-room Playmaker consoles, is not only an interesting and novel computer application – it's one that is coming to Britain in the near future.

Computerised entertainment came to the pub quite a few years ago in the now primitive-looking shapes of *Pong*, *Space Invaders* and *Breakout* machines, and numerous and increasingly better arcade-style games have followed in their wake over the years.

With the questionable exception of trivia quiz games, pub coin-ops have tended to rival their fruit-machine cousins as more or less unsociable pursuits compared with the traditional pub games. A brave but dreadful video version of darts was once attempted, but the less said about that the better.

So it is perhaps time that the silicon chip made its presence felt in the great British boozer in a way that encourages customers to combine and compete rather than stand in a corner interacting with nothing more human than an animated martial artist at the other end of a joystick.

NATURAL

American football is, of course, the natural game for calling predicted plays. Reasonably long gaps in the action – there precisely for options to be considered and tactics planned – plus a largeish but formulated set of play variants allow the saloon bar strategist plenty of opportunity to predict the outcome of the next burst of activity.

But what else from the wacky world of *Grandstand* lends itself to this live action version of *A Question of Sport's* What Happens Next?

Darts looks like a duffer, for exam-

ple, with no more required than predicting that the projected porker will aim at the treble 20 most of the time, although you'd have to be familiar with Eric, Jocky and company's respective favourite 'outs'.

Snooker, too, has severe limitations. There's not much room for intuitive speculation when everyone in the country is predicting that 'Davis will go for a red, then a black, then a red, then a black...' and all getting it right.

SENSIBLE

In fact, though, when the system arrives the options will be pretty sensible all round. Tennis, golf and boxing should stay on the bill, and although soccer had the developers scratching their heads for a while before hitting a suitable formula for the set pieces, *Express* is collectively delighted to learn that cricket is 'an absolute natural'.

With Mike Brearley long retired from the game, though, it is to be assumed that the option 'The captain of the fielding team signals for the sun to move a little squarer on the leg side' will not be on the menu.

Negotiations with TV and satellite companies are still under way, and it is expected that the broadcasters will have to put on their thinking caps to find ways of offering extended live coverage slots (rather than magazine sports programmes which leap around according to where the action is the hottest) as their side of the bargain.

The current state of play, though, is that the organisers are confident of a launch in this country some time early next year.

Express hopes to have full exclusive details of the planned development in two or three issues' time. ■

FROM The ARCHIVE

ONE YEAR AGO

Detective Inspector John Austin, head of Scotland Yard's computer fraud squad, was pledging the firm hand of the law on hackers, wherever they lurked. In an exclusive interview with *Express* he confirmed that his purge would even reach the hobbyist's bedroom.

"Hackers won't be secure in their own homes because they're committing a crime," he said. "Hackers like to think they're clever, don't they? They think that way because they haven't been caught but we haven't got great armies of policemen chasing them yet."

One year on and a solitary hacker is convicted of hacking educational computers. And still not an army in sight.

15 year-old student Emily Holt won her school a complete facility kitted out with a dozen Acorn Archimedes computers. Her four-year project (she started at 11) involved lobbying governmental departments as well as industry giants like IBM, on behalf of the Camden Girl's School. Her aim was a craft, design and technology laboratory.

Her lobbying paid off when the Manpower Services Commission, Camden Consortium and Acorn got together and organised the 12 Archies and four BBC Masters. The facility was installed in a hut adjacent to the school.

A computer was developed that could replace drugs testing on animals.

The BioEngine was able to mathematically predict the behaviour of molecules when exposed to various drugs.

The BioEngine was targeted at those chemical companies who were searching for a way to avoid the suffering that testing was causing animals.

Compaq claimed that its Deskpro 386/33 was 'the most powerful PC in the world'. In a market growing as fast as the

computer market though, it couldn't hold on for ever. The current incoming generation of 486s will soon make it look almost snail-like.

Anyone with £300 to spare and a thirst for knowledge about software protection could buy a two-volume tome listing the major software protection cases in the US (yawn).

Welsh disk manufacturer Parrot turned up its toes and went to the great bird cage in the sky.

Parrot was set up with backing from the Welsh Development Corporation, but a series of problems caused £8 million of debts and its consequent expiry.

Claims were made that up to 1,500 spies were circulating around the United Kingdom visiting computer shows on the look out for high-tech information for technology-starved Russia. Information gathered was allegedly returned to Moscow to be pored over by the Russian scientists.

In the same article, computer magazines were reported as being shipped back to the USSR. That being the case, all the editorial staff here at *Express* would like to say hi to our Red Square readers.

An *Express* report on Computer auctions revealed that there were bargain computers under the hammer. A PCW went for £25, but some of the 'bargains' were a bit long in the tooth.

Computer auctions show no sign of losing their popularity as thousands flock in the hope of getting a supercomputer for a song.

TWO YEARS AGO

A system program error in an air traffic control computer based in Chicago caused the whole system to 'black out'. Controllers went back to 'flying by the seat of their pants' and averted any major catastrophe.

Investigations were planned but two years later, a report from Australia earmarks air traffic control as one of the most potentially dangerous areas for computers to control.

Sources: *New Computer Express*, *Computer Talk*, *Computer Trade Weekly*, *MicroScope*.

COMPUTER EXPRESS

EDITOR • Martyn Lester
FEATURES EDITOR • Andy Storer
PRODUCTION EDITOR • Stuart Anderton
ART EDITOR • Amanda Cook
STAFF WRITER • Keith Pomfret
NEWS WRITER • Ian Pemble
DEPUTY PRODUCTION EDITOR • Ben Feinbaum

CONTRIBUTORS:
Rob Ainsley • Jerry Glenwright • Maff Evans
Steve Carey • Simon Williams • Robin Alway
Andrew Brown • Keith Neal • Jason Holborn
Bertram Carrot • Rod Lawton • John Torofex
Pete Gerrard • Mark Higham • Sally Newman

ADVERTISEMENT MANAGER • Mark Salmon
AD EXECUTIVES:
Simon Moss • Helen Kirkhope • Sophie Eades
AD ADMINISTRATION • James Leach
AD PRODUCTION • Frances Wasem
AD TYPESETTING • Terry Turner

ASSISTANT PUBLISHER • Jane Richardson
PUBLISHER • Greg Ingham

We regret we cannot enter into any personal correspondence or answer telephone queries. Technical enquiries should be addressed to Tech Tips at the address below.

ABC audited circulation July-December 1989:
22,277 copies per week

© Future Publishing Ltd • 30 Monmouth Street,
Bath BA1 2AP • Tel: 0225 442244 • Fax: 0225
446019 • Subscriptions: The Old Barn, Somerton,
Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed by Comag, West Drayton, Middx

While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.

Disks Disks Disks Disks

LOCKABLE STORAGE BOXES

3 1/2"	40 Capacity	£4.50
3 1/2"	80 Capacity	£5.50
3 1/2"	100 Capacity	£6.25
5 1/4"	70 Capacity	£5.50

LIBRARY CASES

3 1/2"	10 Capacity	£1.05
5 1/4"	10 Capacity	£1.05

MOUSE MATS
£2.00

MOUSE POCKET
£2.40

UNIVERSAL PRINTER STAND
£8.50

CLEANING KITS DISK PLUS FLUID
5 1/4" £2.00
3 1/2" £2.50

ALL OUR DISKS ARE 100% CERTIFIED AND ERROR FREE

3 1/2" SPECIAL COLOURED DISK OFFER
10 COLOURED DISKS + BOX £6.50

3 1/2"

Quantity	10	25	100
DS/DD 135 tpi 1mb	£0.45	£0.44	£0.42
DS/HD 2mb	£1.18	£1.15	£1.12
DS/HD Preformatted	£1.28	£1.25	£1.22

5 1/4"

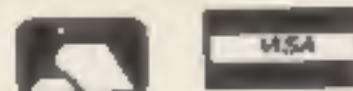
Quantity	10	25	100
DS/HD 1.6Mb	£0.45	£0.44	£0.42
DS/DD	£0.22	£0.21	£0.19

ALL PRICES INCLUDE VAT. ALL PRICES ARE PER DISK
All 3.5 disks come complete with labels
All 5.25 disks come complete with labels,
envelopes and write protect tabs.
BUY NOW WHILE STOCKS LAST.

**NO QUIBBLE REPLACEMENT
OR MONEY BACK GUARANTEE**



To: (0784) 466744
Media VALUE Fax (0784) 450845
Northumberland House, CREDIT CARD
Dept NCE, Drake Ave, HOTLINE (24 hours)
Staines, (0784) 451011
MIDDLESEX TW18 2AP



I enclose a cheque/PO for

My Computer is
PLEASE PRINT CLEARLY

Quantity	Description	Price

Credit Card No:	Postage
Expiry Date:	TOTAL
Signature:	

Name

Address

Post code

Tel. E&OE

POSTAGE PACKING £2.50. NEXT DAY DELIVERY £10.00

PD & SHAREWARE

who do you get yours from?



- There are many PD libraries around but do they offer you....
- ★ Huge collection, thousands of programs on over 3000 disks
 - ★ Same day service - 1st Class post - GUARANTEED
 - ★ Knowledgeable staff on hand (no 'phone after six and ask for fred')
 - ★ Three years experience collecting and distributing PD & Shareware to satisfied customers all over the world.
 - ★ FREE 30 page catalogue, S.A.E (28p stamp) and state MAKE of computer CLEARLY and we'll rush one to you by return.

AMIGA

Currently over 800 disks in our catalogue, including Fred Fish, APDC, AMICUS, Panorama etc. Our own SOF collection is so good other libraries stock them now and of course we are exclusive distributors of the fabulous UGA disks. All are auto-boot, menu driven and so very easy to use, probably the best collection available! We also run an Amiga Club, ask for details.

ATARI ST

We currently stock over 800 disks full of PD/Shareware for these machines, containing every imaginable type of program! Choose from ALL the Public Domain, not just "a selection". If you are new to ST'ing why not join "Clubville", our popular user group, £6.50 gets you newsletters, offers, special prices on goods, 5% Off blanks/PD etc.

IBM PC

(and compatibles)

Thousands of the most popular Public domain and Shareware programs in our current catalogue, all available on either 3.5" or 5.25" format, if ordering (opposite) state which. Whatever type of program you may require, we've probably got it.

MEGA PACK - £19.50 (£14.50)

5 PD disks + 5 blank disks
plus a Library case

(Selection of current popular titles),
INTRO DISK - £1.50

(Atari or Amiga only)

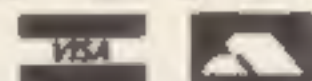
VIRUS KILLER DISK - £1.50

(state machine clearly)

(prices in brackets for 5.25" disks, state preference)

24 Hour orderline on

0705-266509



SOFTVILLE

Unit 5, Stratfield Park,
Electra Avenue, Waterlooville,
Hants. PO7 7XN

THE PLACE TO BE...

ON: SATURDAY JUNE 9th - 10am-5pm
SUNDAY JUNE 10th - 10am-4pm

AT: THE NEW HALL of the ROYAL
HORTICULTURAL SOCIETY
GREYCOAT AND ELVERTON
STREETS WESTMINSTER - LONDON.

3rd
All Formats
**COMPUTER
FAIR**

NEAREST TUBES: VICTORIA
PIMLICO
ST JAMES PK

Low Cost Stands
STAND SALES AND ADVANCE TICKETS
JOHN RIDING: 0225-447453
MIKE HAYES: 0457-875229

Admission £3.00

BE THERE!



CPC

THE SAGA CONTINUES...

Those elusive 6128 ROMs are still turning up here and there, and being snapped up with every-increasing ferocity by owners who want to upgrade their 464s to 6128 spec.

The reason for the ROMs' scarcity is that the ROM manufacturer, Locomotive Software, found out that Amstrad was flogging off the 6128 ROMs individually. Locomotive decided it wanted a piece of the (financial) action and Amstrad basically said to forget it. Result? Locomotive bans the sale of 6128 ROMs on their own, Amstrad says it doesn't want to sell them anyway.

In the wake of that furore, mail order supplier WAVE hit the headlines when it scooped up 1,000 of the little beasties. These have sold out in no time, amid fears that they were the last there would be.

Well now WAVE has done it again. Not 1,000 6128 ROMs this time, but a mere 100. So if you still want to upgrade your 464, give WAVE a call on 0229 870000 to find out the current price - but you'd better hurry.

IONISER'S NEGATIVE EFFECTS

Mr K R Clarke of Halesowen has a very interesting little problem...

"I am writing about my recent experience with an Amcor Air Processor/Ioniser. I first saw the Air Processor advertised in an Innovations catalogue and I was very impressed with its features (it cleans the air and releases thousands of negatively-charged ions - the ones you find on the tops of mountains. The last one to be seen in the city died a horrid death many years ago), so I decided I would buy one to help freshen up the atmosphere in my room. At this time I had nothing to fear, the advert told me it was perfect for the 'micro-climate'.

"A week or so later it arrived and I promptly unpacked the Ioniser, wired it up and plugged it in. Apart from the constant noise from the motor, I was quite happy until I switched on my CPC. On power up I could hear interference on the speaker so I switched off the Ioniser and the interference ended. I then went ahead and loaded Purple Saturn Day and once I was happily gaming away I switched the Ioniser back on. After around three seconds my CPC crashed - the screen covered itself with multicoloured lines and the computer started to load the next part without reason. I switched off the Ioniser and reloaded PSD, and when I switched the Ioniser on again the computer crashed as before.

"Is there anyone else out there who has had similar experiences with Ionisers? My advice to anyone who is considering buying such a device is to think twice!"

INFINITE CHEATS

Are you having trouble getting past the Mutant Jellies on Level Nine of *Rampaging Megabrain* from Zog? What about the Eighteen-legged Cyberhordes in *Deathmash IV*? Can't find that last Rune-stone in *Quest of the Hairy Loonies* in *Loincloths*? Never fear, help is at hand.

Where? Well in the new *Amstrad Action Cheat Mode II* book, of course!

Cheat Mode II: The Revenge is assembled from the last 33 issues of *Amstrad Action*. It contains:

- 750 cheats
- 400 pokes
- 16 maps
- And 150 additional, completely brand new and utterly never-seen-before pokes.

And that's not all. If you can't face the idea of typing in all those pokes by hand, you can also get the listings on cassette!

So how do you get your copy of *Cheat Mode II*? Just send £9.99 (£11.99 if you want the cassettes) plus £1.45 p&p to: *Amstrad Action Cheat Mode Book Offer*, Freepost, Somerton, Somerset TA11 7BR.

JOIN THE ASTRO MARINE CORPS!

Spanish software house Dinamic is famous for two things: superb backgrounds, wicked sprites and ... OK, OK, three things: superb backgrounds, wicked sprites and almost impossibly difficult gameplay. Both *Army and Navy Moves* had opening sections that defeated just about everybody who tried them, and as for *Grand Prix Master*...

Well somebody must have dropped Dinamic a hint, because its latest release *AMC (Astro Marine Corps)* still has those superb background and wicked sprites, but lo and behold you can play it too!

A brief word about the plot. The Deathbringers are a bunch of mutants, rebels, intergalactic scum and generally unsavoury types who plan to take over the world. And the only way to stop them? Send one solitary, lonesome, single Astro Marine to their home planet to find their base and stop them before... yes, well, never mind that - let's get killin'!

There are eight sections filled to the brim with ghastly, ferocious and at times apparently unstoppable enemies. These include such oddities as man-eating plants and nasty blue dragons that attack you even when they're not on the screen!

Finish the first four levels and you get a password for the next four, in typical Dinamic fashion - it means that once you've conquered the first half of the game you never have to plod through it again. And with the ability to take nine hits before you die and five lives before it's game over, you stand a pretty good chance of getting there for once.

Mind you, *AMC* has nothing that's new. It's just another horizontally scrolling bloodbath at the end of the day. What raises it above the usual standard is the technical quality. The parallax scrolling is impressive and the monsters you face along the way very big, very colourful and very nasty indeed.

If you fancy having a go at wiping out the Deathbringers, it'll cost you £9.99 on cassette, £14.99 for a disk version.

Rod Lawton

BBC

E NUMBERS

I'm still eagerly awaiting the arrival of *E-type* for the BBC, partly because the Archimedes version was, in my opinion, the most fun game for that machine so far, and partly because there have been few good driving games for the Beeb.

As I write though, the release date (early May) is here and I've heard nothing yet from 4th Dimension. I've also heard nothing from Superior about its conversion of *Sim City* but, as release dates were vague on that one anyway, I'm not worrying yet.

LOOKING FOR CLUES

This week I'm going to be looking for some clues on the direction Olivetti, Acorn's giant parent, will be taking.

Revenues of \$7.26 billion generating a profit of \$163 million mean that Olivetti, although suffering from a squeeze on profits (down 46% despite rising turnover), is one of Europe's largest companies. This drop was blamed on falling margins which, as you will have gathered from my piece last week, is also Acorn's main problem.

Olivetti has largely left Acorn alone since the takeover, which surprised some analysts, who expected an invasion of spaghetti PCs badged under the Acorn name. So what does Olivetti want from Acorn?

It is unlikely to be any marketing expertise, although that has improved. It could be Acorn's presence in 95 per cent of British schools, but I don't think so. My guess is that RISC technology and the associated R&D work is what Olivetti really needs.

Workstations running power-hungry applications need all the speed they can get and RISC technology is now accepted as the best way of providing that speed. Acorn has the ARM processor and five years worth of development on the project already. Olivetti has already paid Acorn £1million for undisclosed rights to some of the ARM technology, so I am convinced that it is looking for Acorn to develop a super-processor similar to the Motorola 88000. This chip would provide a large part of the processing muscle needed by tomorrow's, multiuser, multitasking, graphics intensive PC.

BETWEEN CHEVRONS

A new 4th Dimension game which has just landed on my desk is *Chevron*.

It's a horizontally-scrolling shoot-'em-up much in the vein of *Scramble* and *Defender*. The manufacturer claims that the graphics and game code take up over 100K of space, so it's not surprising that it comes on disk only.

The scenario is pretty standard - during the first Great Space War of 2100 titanium begins to run out, aliens try to invade the colony of Nevryon to get some of the metal and it's your job to stop them.

To be honest I don't know why they bother putting the scenarios for these shoot-'em-ups on the back of the box, everyone knows the object of the exercise is to kill everything in sight and that's all there is to it.

Chevron does, however, look like a pretty good example of the breed.

Andrew Brown

YOUR FORMAT

CPC	9
BBC	9
Spectrum	10
SAM Coupé	10
PCW	10
MSX	10
QL	11
Atari XE	11
Archimedes	11
C64	11
Amiga	14
PC	12
ST	16

SPECTRUM

COLOUR CODES

I wouldn't mind betting that a fair few bank accounts have been emptied in the cause of purchasing one of those trendy Star LC-10 colour printers. If you splashed out thinking dynamic, gushing and generally stunning technicolour screen print outs were only a few minutes of grinding printer noise away, but have so far found everything appears in black, white and lots of shades of boring grey, a utility called *Rainbow* should interest you.

It's a program which can apparently take any screens you care to load into it and persuade your Spectrum to, erm, produce a spectrum. Unfortunately for such an essential sounding purchase for Star colour printer users, *Rainbow* is only available on the Plus 3 at the moment. A copy on disk costs a very reasonable £5.95 including P&P from the oft-mentioned Garner Designs, 57 Lovers Walk, Dunstable, Beds., LU5 4BG.

MICRODRIVING

You may remember me enquiring, although I won't blame you if you don't, about the location of Microdrive cartridges on behalf of a sadly cartridge-

less chap by the name of James Taylor.

Some kind readers answered his plea with details of outlets selling the damn things. The latest correspondence in this completely fascinating, long-running saga, is from the Sinclair specialist EEC Ltd, who I've plugged in the past for selling extremely cheap Spectrums.

The company was rightly peeved to see its name wasn't mentioned as a supplier of cartridges, despite the fact that it's been selling them with ads in *Express* from early on and has a good 30,000 of the small After-Eight-Mint-shaped pieces of plastic that are Microdrive cartridges in stock. It tells me that it "can supply new cartridges in four pack wallets of four or plastic boxes of 20..." and complete Microdrive expansion kits are also available from EEC Ltd, 18-21 Misbourne House, Chiltern Hill, Chalfont St Peter SL9 8UE (Telephone: 0753 888866).

CLUELESS

Harry Harper of Coventry wants to hear anything about a Spectrum emulator for the PC which was mooted in *Express* last year. I'm clueless but if you've got any info send it to me at *Express*.

Robin Alway

POKE CITY

The biggest, sincerest and most fawning thanks I can muster at short notice go once again to our friend Jon Rose who has just plied me with his latest batch of pokes. The following pretty insignificant looking numbers will, as if by magic, give you the stated eternal benefits when inserted into the right game with the aid of a Multiface or similar device. Jon tells me all the pokes are for the 128K version on the unlabelled side of the game cassette and, hopefully, if we all promise on our Speccys to buy him a drink whenever we meet, Jon will let us have some more.

GAME	POKE	EFFECT
Black Tiger	40289,0	Infinite vitality
	45583,0	Infinite lives
Rainbow Islands	65110,0	Infinite lives
Sonic Boom	31590,Lives	(only works after a credit has been used)
L A Drugs Bust	49972, No. of enemies to kill	

SAM COUPE

BORING AND OBVIOUS

Unlike your columnist, Derek Morgan of Lancashire has already grasped all the boring and obvious stuff in the Coupé manual and now wants to share some of SAM's innermost secrets with us. Here, for your delectation, are a second group of pre-defined function keywords that aren't mentioned anywhere in the handbook.

[0] DEF PROC	[1] END PROC
[2] RENUM	[3] DELETE
[4] REF	[5] COPY
[6] -	[7] KEYIN
[8] LOCAL	[9] LOOP IF

He was also kind enough to supply me with an excellent little program which I'll treat you to next column. In the meantime, a huge round of applause for Derek! Just as soon as I get something suitable in the way of Coupé software he will receive it as a mark of our gratitude. If you'd like

some free SAM software send your Coupé hints, cheats, wrinkles and pokes to me at *Express*, 30 Monmouth Street, Bath, BA1 2AP.

PRICE UP

MGT has just told me some good news and some bad news. Bad news: the price of the basic SAM Coupé has been raised £10 to £179.95 Good(ish) news: all disk-based SAMs will be the same price for the foreseeable future.

MGT also has a new address. The new premises are apparently "essential to the growth of the company" and important if it is to meet the increased demand for Coupés that is sure to come this Christmas. The new address is: Miles Gordon Technology PLC, Century Park, Valley Way, Swansea SA6 8QP. The telephone numbers remain the same.

Robin Alway

PCW

SCAN REWARD

Creative Technology, maker of the excellent desktop publishing program *Micro Design*, is said to be working on a new version capable of working with a hand scanner.

A hand scanner is a small device the size of a Walkman that you can roll over a page of text or graphics. It converts the picture into a disk file that can be incorporated into a *Micro Design* document - giving you a quick and easy way of putting illustrations into a newsletter or other publication.

The scanner should be in production by the end of this year and will be about £195 (my estimate, not theirs).

GAME FOR A LAUGH

CDS Software is bringing out a new games compendium for the PCW. For just £20 you get backgammon, darts, dominoes, plus various card and word search games.

I haven't seen one yet but I bet it's good: CDS has brought out some very good games in the past including Steve Davis' *Snooker*, a great snooker and billiards program despite all the balls being greens! Details on 0302 321134.

ADDRESSING THE PROBLEM

Putting the address in the right place on an envelope is a tricky business - especially as you often have to work with envelopes of varying sizes.

Here's one way to do it. Insert the envelope into the printer. Wind it up until the print head is at exactly the level you want.

LocoScript 1: Press [f1] 'Options' and, using the cursors and the [+] key select 'Single sheet paper'. [ENTER]. Press [f3] 'Actions' and type in a left offset of about 30 then [ENTER]. The print head moves across to that setting.

LocoScript 2: Press [f3] 'Paper' and using the cursors and the [+] key select 'A4' [ENTER]. Press [f6] 'Left offset' and type in a left offset of about 30 then [ENTER]. Again the print head moves across to that setting.

If it's at the wrong place for the address, type in another figure and [ENTER] until you get it where you want it. Clear the printer status line with [EXIT] and press D in the disc manager for 'direct printing'. Type the address and leave direct printing with [EXIT].

INDEXING, THE PROGRAM THAT DOES

Barry White of Bournemouth asks me if there is an easy way to index the book he's writing in *LocoScript*. Yes, there is: buy *Ansible Index* a special indexing program for LocoScripters for £30 from Ansible on 0672 62576.

It's fast, easy to use and has a manual in plain English.

NO ONE QUITE LIKE GRAMMER

Had to laugh at a press release I got about a new PCW program to help teacher with their mark sheets. The circular described it as being developed in conjunction with teachers at "Friern Barnet Grammar School".

If you can read this, thank a teacher...

Rob Ainsley

MSX

ALL FORMATS

Don't forget that the second of this year's All Formats Computer Shows is being held on June 9 and 10 at the Royal Horticultural Halls in London. The organisers are hoping to include a section for the MSX user, so keep reading this column for an update on this event.

KNIGHTMARE TIP

Here is a tip for the Konami game *Knightmare*. Pause the game, (F1), type in MARE18TH and press enter. You should obtain 99 lives and be near to the shield. Also for this game, hold down the I,N and the left and right cursor keys for an extra 25 lives. If you hold down the left cursor key and select key you will become invisible for 90 seconds.

Thanks to all who write in with tips, your help is much appreciated.

MONITOR TIP

A gentleman by the name of Nigel Myers kindly sent me a tape which contained a couple of useful utilities for the MSX user. These are a memory monitor and a memory peeker for the MSX computers and, although the listings are fairly short, they are well structured and quite powerful. The first program displays the entire contents (64K) in correct hex notation and the character equivalent for the given address is printed.

```
1 ' Memory Mon. by NIGEL MYERS
2 ' For "NEW COMPUTER EXPRESS"
3 ' (variable "A" is the start
  address you wish to peek from)
10 SCREEN 0:WIDTH
40:KEYOFF:A=0
20 FOR R=A TO 65535!:LOCATE
  0,24:PRINT HEX$(A);:FOR X=5 TO
  25 STEP 2
30 IF PEEK(A)<16 THEN LOCATE
  X,24:PRINT "0";:GOSUB 60 ELSE
  LOCATE X,24:GOSUB 60
40 IF PEEK(A)>31 THEN LOCATE
  26+X/2,24:PRINT CHR$(PEEK(A));
50 IF A<65535! THEN A=A+1:NEXT
  X:PRINT:NEXT R ELSE END
60 PRINT HEX$(PEEK(A));:RETURN
```

The second program, the memory peeker, is similar to the above but the memory contents are not displayed. Instead, the character codes are displayed across a longer line, giving an easier to read display.

For those who own a Toshiba HX/10 computer, list either program and change the variable A to, start at 15734. This displays the range of error messages available; use the stop key to pause or continue the display. This may also work on other MSX machines.

```
1 ' Memory Peeker (v2) by NIGEL
  MYERS
2 ' For "NEW COMPUTER EXPRESS"
3 ' (variable "A" is the start
  address you wish to peek from)
10 SCREEN 0:WIDTH
40:KEYOFF:A=0
20 FOR R=A TO 65535!:LOCATE
  0,24:PRINT HEX$(A);:FOR X=5 TO
  38
30 IF PEEK(A)>31 THEN LOCATE
  X,24:PRINT CHR$(PEEK(A));
40 IF A<65535! THEN A=A+1:NEXT
  X:PRINT:NEXT R ELSE END
```

Thanks to Nigel for the listings.

Keith Neal

➤ C64

ETHICAL OR WHAT?

In Express 78 I mentioned a magazine called *Crystal News*, the magazine for the Crystal Unicorn System (or Club to you and me). I have just received a second copy of the magazine, the May issue, and can confirm that the quality is as good as ever.

Only one thing concerns me, and that is a POKE and SYS call that gives anyone owning a game written using the shoot'em-up construction kit, access to the entire *SEUCK* program itself. For a magazine that is so firmly against piracy this seems to be a strange thing to do. Would our Atari friends like cheap copies of STOS or our Amiga friends cheap copies of AMOS? Of course they would but I don't think Mandarin would be too happy about it. That not withstanding (and I'll bet one or two of you will write off for the magazine) the address to write to has changed from the last one I gave you. Now you have to write to Adam Whittle, a 64 whizz kid if ever I saw one. Adam lives at Redways, Hartshall Road, Walton Highway, West Walton Wisbech, Cambs PE14 7BJ.

WHICH COMPUTER?

One of the people at Crystal Unicorn (I presume it's Steve Smith) has got a 512K computer that runs at 4.09MHz and has a 40Mb hard drive. You could have many guesses as to which one it is, but not many people would immedi-

ately think of the right answer. The computer in question is a Commodore 64 and if that doesn't get you sending off for the May issue (with more details about this amazing but true computer) then nothing will.

WHICH POKE

Another half dozen games under the hammer this week giving you cheat modes galore:

Slug POKE 9420,173:SYS 11619
Thunderblade POKE 13622,44:POKE 8500,44:POKE 13135,44:SYS 4092
Thundercats POKE 35088,173:SYS 2061
Buggy Boy POKE 39945,96:POKE 2048,32:POKE 2050,13:POKE 2049,104:SYS 2048
1985 POKE 24036,0:SYS 20000
Gianna Sisters POKE 8257,173:SYS 2098

It never ceases to amaze me how people find these things out and many thanks to those concerned. Keep up the good work!

LET'S GET TECHNICAL

Mr Mardell writes in with a spot of technical advice from Stoke Newington in North London. I used to live in Alkham Road, Stoke Newington. I wonder if he knows it? Anyway, the advice in question concerns the C2N cassette recorder, and a query that came in a while ago about the connections to the plug for it. The colours used by Mr Mardell when he recently repaired a cassette deck are blue, brown, white, red, -slot-, green (+5V), and black (ground).

Pete Gerrard

➤ QL

MORE APL

A few issues ago I mentioned MicroAPL's implementation of APL for the QL.

If you've seen the light or you are already a devotee, you will find membership of the British APL Association very useful - it publishes *Vector*, a very informative quarterly journal, for an annual membership fee of £10. For more information contact the secretary, Graham Parkhouse, Department of Mechanical Engineering, University of Surrey, Guildford, Surrey.

PD APL

A public domain version of APL for the QL was being produced under the aegis of I-APL Ltd. Unfortunately it was never completed. I have a beta test copy and it works quite well, apart from there being no file I/O.

If anyone is interested in continuing with this project please contact: Anthony Camacho of I-APL Ltd at 2 Blenheim Road, St Albans, Herts, AL1 4NR. I-APL Ltd also supplies PD versions for the PC, Beeb and Archimedes at £4.50 a throw, if any users of these machines read this column.

MICRODRIVE CARTRIDGES

I reported some time ago that Ablex had no intention of resuming production of Microdrive cartridges.

There appear to be very few new

cartridges around and some software suppliers are asking customers to provide their own media, as they require software to be supplied on cartridge.

Although Sinclair's decision to use Microdrive storage on the QL has been ridiculed in some quarters, Microdrive technology had quite a lot going for it at the time. Similar systems had been fairly successful on other machines, such as the Aculab Floppy Tape on the Tandy TRS-80 Model I and Microdrives fitted in quite nicely between ordinary cassette storage and floppy disks.

Used carefully, the cartridges are quite reliable and access times acceptable, especially for users with no experience of floppy disks. About 100K is available on each cartridge and they can be carried around in one's pocket, without any problems.

In fact at one time the QL was embargoed for export to communist countries under the COCOM regulations, not because of its performance but because the Microdrive data storage density was too high for the regulations!

QL SPEED

I recently compared the speed of my QL with the Opus XT clone, running the same C programs, compiled with Lattice C on the QL and Zortech C on the Opus. With the Opus running at the standard XT speed of 4.77MHz I was pleasantly surprised to see that the QL was a bit faster than the Opus.

Of course, with the Opus running at its normal speed of 10 MHz it was about twice as fast as the QL.

John Torofex

➤ XE

NEWS FROM THE CITY...

I hope all of you who have access to modems have been logging on to the City bulletin board regularly and contributing to the forum there. For those of you who don't know, the City is a bulletin board entirely devoted to the Atari 8-bit - at least it was. Recently, many other computer enthusiasts have been logging on to the City - no bad thing, right? - but because the City is entirely user-configurable, particularly if you have Guardian or Sentinel status, it tends to become clogged with extra menus which have limited appeal - except to whoever created them!

This problem has been growing and growing to the point where it's almost out of control. Menus hither and thither devoted to every subject have ensured that space is getting tight and the 8-bit gets less of a look-in. This is obviously an unnecessary situation because the 16-biters are already well catered for elsewhere.

Don't worry however, because the City's creator, James Bastable, has recognised the problem and is taking steps to ensure the City remains for and by the Atari 8-bit community. How is he doing this? Simply by clearing the board of unsightly and boring 16-bit menus. And how are you going to reward James for this fearless devotion to our favourite machine? By logging on, that's how! Get out there with your modem and start calling. The City can be contacted by calling 021-353 5486 with a variety of speeds including V21/V22/V23 and now the superfast V22bis. **Edmund Blake**

➤ ARCHIMEDES

FIREBALL II

Cambridge International Software sent through a copy of *Fireball II* this week. Although not exactly hot off the press, I was pleased to see it as it is probably the best example of the bat 'n' ball genre on the Arc. As an extra incentive, there's a copy of the original *Fireball* on the release disk as well.

Fireball II adapts the familiar *Arkanoid* ideas with a fair degree of originality. Capsules aren't dropped directly from bricks, but bounce diagonally off the walls at varying angles. This makes them harder to capture and to avoid. There are two negative capsules, which take away extra equipment and reverse bat direction.

The positive ones include a ball doubler, multi-ball launch, no brick-reflect, auto-lasers, bat doubler, bat snaker, sticky ball, wave jump and bat protect. The last of these is only useful in higher levels, when certain bricks produce green fireballs that are fatal to the touch. The centre and right mouse buttons can move the ball along the bat when you add sticky ball to your arsenal.

Screens start easy and progress fairly smoothly in difficulty. There are several screens where one capsule is particularly useful in completing the wave. Graphics are nicely implemented, though there's nothing particularly startling. Sound is rather better with a good, if rather repetitive, soundtrack and an excellent series of digitised spot effects. These include a manic laugh when you lose a life, 'Relax' when you hit

pause and 'Sound Ceased' if the neighbours get fed up with the game's effects.

Fireball II also includes a screen editor, so you can lay down your own waves of bricks, alter existing waves and rearrange the order in which they're played. This greatly extends the playable life of the game. At £24.95 it's about par for the Arc course, and comes recommended. If your local dealer doesn't have a copy, ring Cambridge International on 071-833 4023.

LASER DRIVER, PART 32476C

As, hopefully, the last word on the Acorn laser driver and its default setting of 150dpi, please consider the following. If you buy a 9-pin dot-matrix printer, it is almost certainly because you're on a budget and computing at home. You're probably as likely to print listings in draft mode as you are letters in NLQ.

If you can run to a 24-pin dot-matrix, you're likely to want its LQ mode more than its draft, so it would be more sensible for software to default to that. By the time you get to the cost of a laser, you've either got a lot of money to hand or you're using your machine for semi-professional work. As such, you expect your software to give of its best. Defaulting to half the printer's available resolution, which some lasers can't actually reproduce, is daft.

It's a small point and really not worth getting wound up about, but it's still a daft default.

Bertrum Carrot

ARXE ABOUT EMULATORS

A lot of interest is being shown in a new, small but leading-edge software house called Arxe Systems. The reason for this is that Onkar Jagpal, the brains behind the outfit, has just put together a Spectrum 48K emulator for the Arc. No, don't laugh; it has quite a lot going for it.

For a start, you should be able to pick up the emulator and five games for £20, which is cheap by Arc standards.

The games may squeak a bit, especially if the piezo-electric 'loud-speaker' of the Speccy is emulated, but there are still some very playable games available for the machine.

Even more interesting, though, is the other emulator Jagpal is working on - a 68000. Although an emulator for the base processor is not that exciting, if it were accompanied by emulations of the ROMs for ST, Amiga or Mac, there would be a lot to get agitated about. Of these, the easiest would probably be the ST.

Following this train of thought to its logical conclusion, would give us an Arc with a sudden surfeit of new software, both serious and games.

And, of course, there's a very acceptable Mac emulator, the *Spectre*, for the ST.

Ah, what it is to dream!



well put it in an even more commanding position. Check out Dixons or ring Casio on 081-450 9131 for the address of your nearest dealer.

THUNDERSTRUCK

Really Matt Nicholson's department, I guess, but I thought I'd mention how much fun the new PC game *Thunderstruck* is.

The game is due out in June and I've been playing a demo version of it for the last week or so. The game drops you as pilot of a ground-skimming fighter into a game arena populated with robotic drones. You have to guard a series of installations from attack by the drones, while trying to search out and destroy the generators which are producing them.

The fun element of the game is in the manoeuvrability of the ship and the quality of the 3D graphics. The patchwork landscape rolls smoothly around under your ship which is viewed from behind and slightly to one side, or more appropriately perhaps, from a camera ship trying to stick to your tail.

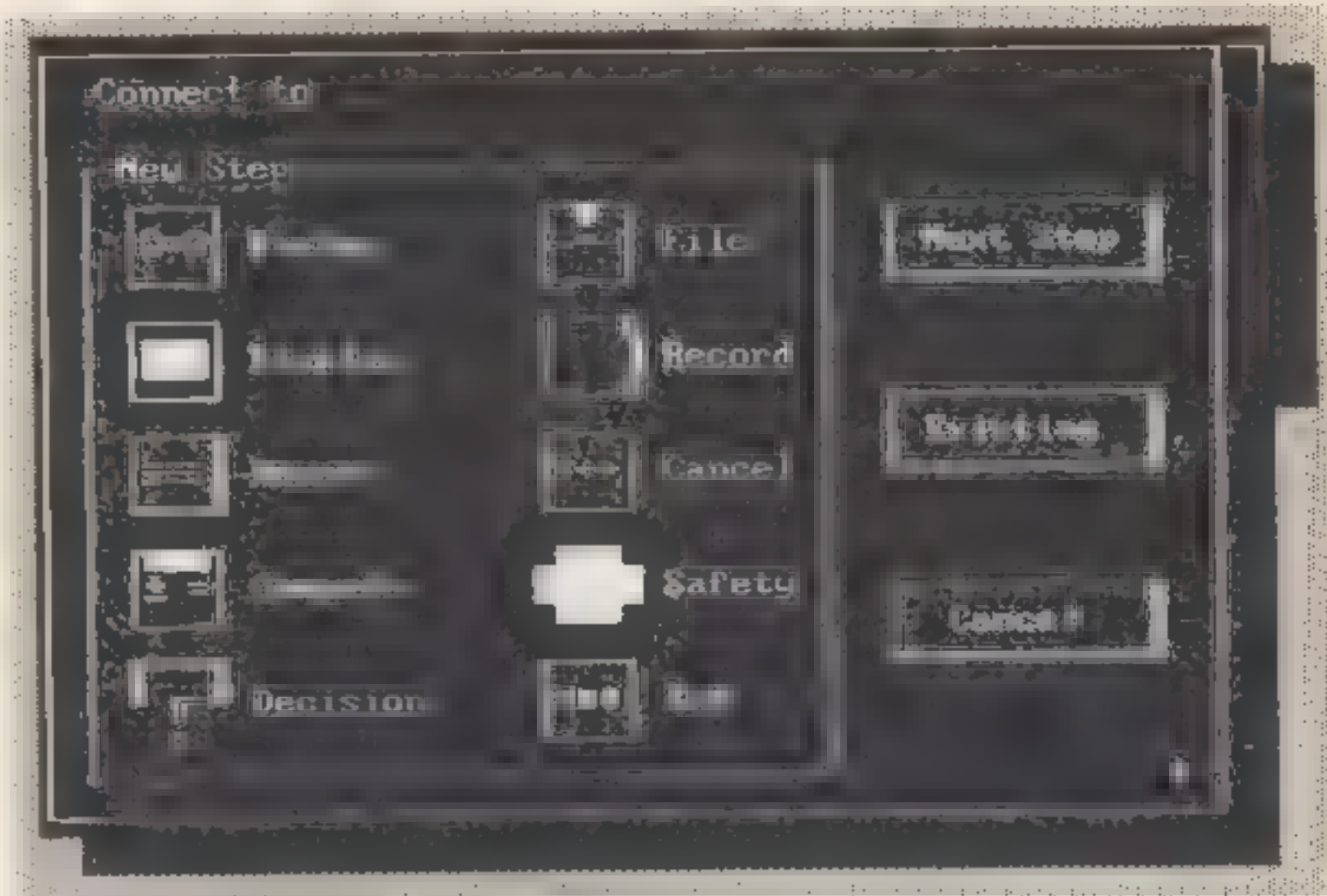
Control is with mouse or keyboard and I find the whole game very addictive. It will be published by Millennium software at £29.99 and the demo I've been playing will appear on the July PC Plus cover disk.

Well worth a shot or two hundred, if you own an EGA or VGA monitor.

THE KEYCODES SCAN

When you're writing batch files of programs to detect keypresses on a PC, there are at least two systems of coding that you need to bear in mind.

The ASCII set is the most common, but has the disadvantage that there are no codes for the special keys on the key-



• Cause, a hypertext database program from the States.

board, such as function keys, cursor controls or the numeric keypad. For this reason, the designers of the PC included a system of scan codes, where each key has a unique code.

The right software, such as Clockwork's GET routine, returns these scan codes as errorlevels, which you can then build into your batch file to handle responses from the user of the program. Clockwork is on 0705 483217.

A GOOD CAUSE

The US hypertext-style database program, *Cause*, is beginning to come into its own with the release of a series of pre-written programs, called *Effects*. These applications add some fun to the genre, as they're WIMP-based and aim to make the jobs they're aimed at easier to do on a computer. Details from Keyword Software on 09424 1172.

SYNCHRONICITY

For many years people have been saying "That's a strange coincidence". Recently, various studies have been made of these coincidences and a theory called synchronicity has been put up to cover them. A prime example of its working happened to me this week.

I had to ring the States to talk to a company about compression routines. When I got through, a recorded message said something like "If you would like to make a retail order, press one. If you would like to make a technical enquiry, press two. If you require operator assistance, press three etc". Pressing the appropriate key on my telephone keypad directed the call to the right destination. 'Damned clever, these Yanks', I thought to myself.

What should arrive in the post the same afternoon, however, but a press release from IBM, detailing its 'voice-enhanced applications'.

Among the new announcements was the 9270 Voice Response Unit, which allows a caller to "enter choices and data via the telephone keypad as if he were making a normal call. The VRU responds with prompts, or the information wanted by the caller, spoken in human voice, pre-stored in digital form." Coincidence, or what? IBM is available on 0705 321212.

MORPHIC RESONANCE

On a related subject, I went on a short course at the weekend on the subject of resonance.

Half of this was devoted to chanting and voice work and the other to a discussion of morphic resonance. This is

another interesting theory, put forward by the Cambridge biologist, Rupert Sheldrake. Very basically, it claims that a 'group memory' is at work in the universe, such that if an event occurs, the chances of that event occurring again are increased.

Experiments with the formation of crystals, the boiling points of new compounds and the ability of rats to solve mazes give substantial support to the theory.

The most interesting experiment to date involves two groups of people attempting to solve the *Evening Standard* crossword, one group the day before it is published and the other the day after. Neither group knows what they are to be asked to do, so there's little chance of 'mugging up' the answers. The group solving after publication, when thousands of people have already worked on the puzzle in the paper, are found to be around 20 per cent better at the puzzle than those working before publication.

So what's this to do with computers? Well, an April Fool spoof based around Sheldrake's work was published in the magazine *Computer Shopper*.

The article claimed that European scientists, including one named Dr Lora Philo, had discovered decreases in the time taken for repeated runs of certain computer programs.

Sheldrake contacted the author of the piece to point out how close it was to what he believed might actually be the case. It now seems that further research may be continued along these lines. Anyone fancy taking part?

BROUGHT UP BY STANDARDS

As the quickest magazine on the planet to pass on information to PC users, I should mention that in trying to standardise file types on PC Plus's cover-mounted disk last month, I inadvertently changed the name of the manual for the unusual *MindReader* word processor.

This means that when you chose to print out the manual, the program can't find the relevant file. Changing the name **MANUAL.DOC** to **MANUAL.MR** will correct the problem. Alternatively, you can print it directly by typing **COPY MANUAL.DOC PRN:**. If you haven't come across *MindReader*, it is a shareware word processing program which attempts to finish your words for you when you type. It uses artificial intelligence techniques to learn the commonest words you use. It's main uses are probably for the disabled to save painful typing.

Simon Williams

CASIO CALENDAR

Almost all PC users will have a use for a pocket organiser. Some will call it an address book, some will carry a Filofax, the wealthy may run a Poqet PC. It looks as if there will be another choice before long. Casio is announcing a range of five pocket diaries, at prices varying from £80 to £190.

All but the entry-level model boast 32 x 6 LCD screens, and all offer miniature QWERTY keyboards and numerous other keys to control their many functions. Built into the 150-300g units are address files, clocks, schedulers, calculators and room for the odd memo. The top of the bunch SF9000 features 64K of main memory with room for a further 64K memory card which may be either ROM or RAM. ROMs will include a spell checker and thesaurus.

Casio already claims 40 per cent of the electronic pocket organiser market, and aims to take a larger chunk of this from the likes of Psion and Sharp this year. The design of its new range could

THE MANHOLE

GAME
OF THE
WEEK

Activision • £39.99

Click on a dragon and it offers you a biscuit; a whirlpool where find yourself floating on someone's cup of tea; a rabbit being offered that very same cup of tea somewhere else; a TV floating through the screen to the bottom of the sea. *The Manhole* has all this and more, presented in a way that even a four year old can understand and use.

There are precious few decent packages around for kids, most coming from the States. *The Manhole* first appeared on the Macintosh about two years ago, and is now available on the PC over here.

It is essentially a graphic adventure with over 600 beautifully drawn pictures, many animated and all linked so that clicking the mouse on many of the objects leads on to



another picture. It can also be controlled by joystick or keyboard, but mouse is the easiest.

The most obvious things to select are doorways, ladders or hatches, and most lead into new locations. However clicking on many other objects lead to unexpected surprises - clouds of fishes appearing before your eyes, pictures on the wall that come alive, stars that shoot across the sky. Some of the creatures even talk with surprising clarity through the PC's speaker.

The game borrows

heavily from *The Lion, The Witch and the Wardrobe*, *Wind In The Willows*, *Alice in Wonderland* and *Winnie the Pooh*, but is nonetheless totally original. There is no plot as such, and there are no puzzles. All you need do is explore, and certainly my five-year-old daughter shows no sign of getting bored.

My only criticism is the price, but then it does contain over 2Mb of compressed picture data and comes on five disks. It also has some excellent music if you have an Ad-Lib or Roland sound card.

Matt Nicholson

ATARI ST and AMIGA

Sixteen Bit Superdeals from the Sixteen Bit Specialists!
CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier.

NEW!!

520STE Power Pack £369.00

Inc. VAT and Next Day Delivery

**NOW INC
HYPERPACK**

Power Pack includes:

- ★ 520STE 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ Over £550 worth of games software, including OutRun, Gauntlet 2, R-Type, Space Harrier, Super HangOn and 16 more Top Games
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE
- ★ First BASIC and First Music Utility Software
- ★ FREE JOYSTICK AND FREE MOUSE MAT WORTH £4.95
- ★ All leads, manuals PLUS MOUSE and free mains plug!
- ★ Hyper Pack S/W inc Hyper Draw, Hyper Paint and Borodino Battlescape War Game

520STFM DISCOVERY PACK £279.00

NEW

NEW! fantastic value for money pack includes:

- ★ 520 STE 512K memory keyboard with built in 1 megabyte double sided disk drive and TV modulator
- ★ Game Pack including OUTRUN, SPACE HARRIER, CARRIER COMMAND and BOMB JACK
- ★ UTILITY PROGRAMMES inc STOS GAME CREATOR, NEOCHROME painting package and FIRST BASIC programming language
- ★ ST tutorial programme and 'DISCOVER YOUR ST' beginners guide to the ST computer
- ★ PLUS MOUSE, MOUSE MAT, MANUALS, ALL LEADS, METACOMCO BASIC AND MAINS PLUG!

1040STE BUSINESS PACK £449.00

- ★ Includes the new 1 megabyte 1040STE keyboard plus over £200 worth of business software including WORD UP wordprocessing software, featuring glossary and mail merge, K-Spread 3.0 spread sheet and SUPERBASE PERSONAL Database software Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.

MEGA 1 BUSINESS Pack £529.00

Features:

- ★ Separate Keyboard and System Unit
- ★ Inc. all software supplied with 1040 STE Business Pack
- ★ Blitter chip installed for faster graphics
- Inc SM124 Mono Monitor.....£628.00

ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DSDD Disks
Competition Pro 5000 Joystick.....£13.95	Box of 10.....£13.95
Competition Pro with Autofire.....£14.95	Memorex Disk Box
Konix Speedking Joystick.....£11.95	For 40 3.5" Disks.....£8.95
Red Mouse Mat with Amiga logo.....£5.95	Amiga 1/2 Meg Expansion.....£99.95
Plain blue Mouse Mat.....£4.95	Control Centre Atari or Amiga.....£44.95

Contriver Amiga and ST Mouse with FREE Holder and Mouse Pad £20.95

PRINTERS

Star LC24-10 24Pin incl. lead ST/Amiga.....£249.00
Star LC10 including interface lead for ST/Amiga.....£169.00
Star LC10 colour including interface lead for ST/Amiga.....£219.00
Citizen 120D including interface lead for ST/Amiga.....£139.00

SEIKOSHA 80 COLUMN PRINTERS - AMAZING PRICES

Seikosha 9 pin NLO including interface lead for ST/Amiga.....£139.00
Seikosha 24 pin LQ including interface lead for ST/Amiga.....£239.00

AMIGA A500 GAMES PACK

featuring **BAT PACK** or the new
FLIGHT OF FANTASY PACK
£399.00

Inc. VAT and Next Day Delivery

BAT Games Pack includes:

- ★ Amiga A500 512K Keyboard with Built-in 1 Megabyte disk drive.
- ★ Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ DELUXE PAINT II GRAPHICS PACKAGE.
- ★ PHOTON PAINT II graphics package with animation worth £70.00.
- ★ FREE, only-just-released BATMAN - THE MOVIE games software.
- ★ NEW ZEALAND STORY arcade games software.
- ★ F16-INTERCEPTOR - amazing 3D flight simulator software.
- ★ A further £230 worth Games Software, including BUGGY BOY, MERCENARY, BARBARIAN, WIZBALL & six more games.
- ★ FREE JOYSTICK, MOUSE MAT AND 10 BLANK DISKS.
- ★ Amiga BASIC, Amiga EXTRAS 1.3, Workbench 1.3 PLUS the Amiga Step by Step Tutorial.
- ★ All leads, manuals PLUS MOUSE and mains plug!

FLIGHT OF FANTASY Pack includes:

- ★ F29 RETALIATOR - fantastic NEW flight simulator - replaces Batman
- ★ RAINBOW ISLANDS - smashing new arcade game - replaces New Zealand Story
- ★ ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS - replaces F16
- ★ Everything else listed for BAT Games Pack.

AMIGA 1 MEG BAT GAME PACK £499.00

1 Meg Bat Games Pack includes:

- ★ Fitted 1 Megabyte Memory Expansion + Real Time Clock Card
- ★ Everything listed for the A500 Bat Game Pack
- ★ DRAGON'S LAIR 1 MEG MEGAGAME!

AMIGA A500 CLASS OF THE 1990'S BUSINESS + EDUCATIONAL PACK £549.00

FEATURES:

- ★ Amiga A500 + TV Modulator
- ★ Midi Interface + Software
- ★ Kind Words II word processor
- ★ Page Setter DTP
- ★ Super Base Personal Database
- ★ Maxiplan 500 Spreadsheet
- ★ Amiga Logo, BBC Emulator, Deluxe Paint II
- ★ Mouse mat, 10 blank disks and disk wallet

EXTERNAL DISK DRIVES

Atari SF314 1 Megabyte.....£139.00
Amiga A1010 1 Megabyte.....£109.00
Cumana 1 Megabyte Atari or Amiga.....£89.95
NEC 1 Megabyte Atari or Amiga.....£79.95
Atari Megafile 30 Hard Disk.....£439.00
New! Commodore A590 20 meg hard disk.....£369.00
A590 Hard Disk + Memory Upgrade installed.....Phone

MONITORS

Commodore Amiga A1084 stereo Monitor inc lead.....£269.00
Atari SC1224 Colour Monitor inc lead.....£259.00
Atari SM124 Mono Monitor including lead.....£119.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga.....£259.00

24 HOUR CREDIT CARD HOTLINE ☎ 0908 378008

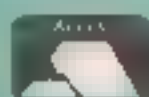
To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to:
 Digicom Computer Services Ltd and send it with your order to the address below. Callers are also most welcome at the address below.

DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES, MK2 2AZ.

All prices include VAT and delivery by courier

Licensed Credit Brokers * Written quotations available on request APR 34.5% Variable.





GFA STUNNERS

After stumbling at the starting blocks, GFA Data Media's Amiga version of its highly-regarded BASIC language system, GFA BASIC, is finally starting to make a name for itself among Amiga owners. According to GFA (UK), sales of Amiga GFA BASIC have far surpassed expectations, which is good news for both GFA UK and for future GFA products on the Amiga (perhaps GFA will now consider converting ST programs such as GFA Draft and Raytrace?).

Due for release some time in June on both the ST and the Amiga is GFA BASIC 3.5, a vastly upgraded version of GFA BASIC that offers 50 new BASIC commands.

According to the company, most of these new commands are aimed at matrix manipulation, therefore making GFA BASIC the ideal tool for array manipulation and 3D graphics work. New commands include MATREAD, MATCOPY, MATSET and MATMUL, all of which are matrix manipulation tools (you should be able to work out what each does by yourself, so I won't go into too much detail).

To complement this new release, GFA intends releasing an upgraded version of the GFA BASIC Compiler to cope with the new commands.

As always, GFA plans to allow existing users to upgrade easily - contact GFA on 0734 794941 for specific details.

No news yet about the eagerly awaited GFA Assembler - GFA is keeping rather tight lipped about this one. However, GFA claims that the program is virtually finished and shouldn't be too far off now - as always, I'll bring you more details when they are made available.

As a side line, Amiga owners may be interested to hear that GFA is to produce PC and Unix versions of GFA BASIC. The Unix version is to be called GFA BASIX (imaginative lads, the GFA'ers!). GFA hopes that this will open doors to considerably more users as this new release will be usable on just about any system that supports the Unix standard (including the Amiga Unix card, AMIX).

With this latest release, GFA hopes to put GFA BASIC up in line with industry standard BASICs such as those produced by companies like Microsoft. If GFA BASIC is accepted within the professional applications market, this could allow third-party software developers to easily and quickly produce versions of their software for the Amiga, ST, PC and Unix markets.

PRO-24 LATEST

Suffering Amiga musicians haven't long to wait now for Steinberg's long awaited MIDI sequencer system, Pro-24. OK,

we've been hearing words that effect from Steinberg and its UK distributors, EvenLode Soundworks (099 389 8484) for about the last six months, but it seems that the wait is almost over.

According to EvenLode, all problems with Pro-24 have been sorted out and the company is looking at a late June launch date for what has become one of the most eagerly awaited Amiga music products ever (apart from Music-X, that is!).

Unfortunately for Amiga musicians on a tight budget, Amiga Pro-24 certainly isn't going to be cheap - expect a price of £285. Although Pro-24 is £60 more expensive than its main rival, Music-X, the product is sure to receive a warm reception from musicians used to using the ST version (which has practically become an industry standard).

Steinberg claims that Amiga Pro-24 is a completely new piece of software and is not just a straight port from the Atari version as many first suspected (shame on them).

All essential functions of the latest Pro-24 III version have been adopted (read between the lines - does this mean that Steinberg has removed features that it believes to be non-essential?). Additionally, numerous new features have been added that Steinberg claims will make working with Pro-24 even more efficient and comfortable. Needless to say, as soon as I can get my hands on a copy (are you listening, EvenLode?), I'll bring you a full review. In the meantime, here's a list of what Amiga Pro-24 has to offer:

- 24 independent tracks with up to 9,999 bars (Should be enough for most of us, but many Amiga owners may feel rather restricted when you consider that



• Stunning 3D fractal graphics with MandelMountains - and the program is available for nothing!

even Music-X Junior offers 250 tracks!)

- High resolution of 96 ppq. (Hmm. 96 ppq isn't what I'd call high resolution - Music-X offers a recording resolution of 196 ppq. Dr.T's KCS offers a resolution of 396 ppq!)

- Tape mode and pattern orientated operation may be combined.

- Numerous recording functions allow for automatic Punch in/Punch out. Auto-Record and simultaneous recording on several tracks (a nice touch, and very useful).

- Grid Editor for easy graphical editing of MIDI performance data.

- Drum Editor offering special functions for recording percussion parts. (Very nice indeed - this is one of the few MIDI utilities that Amiga musicians have been crying out for because not a single

Amiga music package offers this excellent facility!).

- MIDI Mixer - mix down your song on screen (From what I've seen of this feature, it looks very similar to the AutoMix option available within Dr.T's KCS v3).

FRACTAL SCORCHER

Wanna be blown away? Wanna experience the feeling you get when your Amiga does something so amazing that your chin hits the floor with such an impact it crashes your hard drive? If so, you've got to check out MandelMountains, the latest Mandelbrot generator for the Amiga!

"But Mandelbrot generators are for spotty computer buffs whose idea of a fun is disassembling the Amiga ROM". If this is your view, then you're in for a shock - just check out the image on this page and I'm sure you'll agree that the results MandelMountains can produce are certainly striking. OK, the mathematics involved are pretty boring to say the least, but who cares when the results are so impressive!

If you haven't already sussed it out for yourself, MandelMountains is a Mandelbrot generator with a difference. Instead of producing 2D Mandelbrots (which can justifiably be regarded as tame stuff these days!), MandelMountains renders 3D, elevated views of the Mandelbrot set. As you can see for yourself, MandelMountains even calculates light source shading.

If this has sufficiently whetted your appetite, then why not give your friendly PD supplier a bell (yes, MandelMountains is PD!). The program is available on Fish Disk 295.

Jason Holborn

AMIGA GAME OF THE WEEK

Gremlin • £19.99

Skateboarding is in again, and, as with all areas of marketing, the computer software trade likes to capitalise on crazes. The last wave of skateboarding brought us Atari's 720 Degrees and Electronic Arts' Skate or Die. Now the next generation of concrete surfing has arrived. Gremlin has decided to cash in on the act by releasing Skidz.

The game places you as a youth with sterling community spirit, in other words the only one who can be bothered to pick up the rubbish! You have set yourself the task of making the town cleaner by picking up at least 75 per cent of the trash in the town's dirtiest areas, namely the main street, the park, the local building site, Chinatown, the canal and the boardwalk. You can choose to pull on your scruffy jeans and ride your BMX or kick ass in your most colourful street-wear on your trusty skateboard, each with its own advantages and drawbacks.

The other townsfolk are a



pretty careless bunch and will wander around getting in your way, wasting valuable time before the infamous 'litter spirit' comes on to steal your energy.

Extra energy can be found by picking up useful things such as food and tools, or by buying top-ups in the local shop. For this you need some of the old spondulicks, the moolah, the dosh - money!

Cash is obtained by collecting carelessly dropped

coins and notes, or performing tricks off the ramps left by other skate-fiends.

Once the town has been cleaned up, you can enter a race across a special circuit, but get some practice in, as the opposition is hot!

Rather surprisingly, Skidz isn't just another 'fad' game that falls flat on its face.

The sound is racy and the graphics are excellent, with some well-drawn sprites whizzing

about colourful and atmospheric scenery. The presentation is backed up with incredibly addictive gameplay, loaded with a superb sense of humour running throughout.

Even if the very thought of placing wheels under your feet and flying around the streets unprotected fills you with dread, have a try at Skidz.

Don't worry, the wild shorts and big trainers are optional!

Maff Evans

QUALITY
SUPPORT
SERVICE

Technology Centre



DOT MATRIX PRINTERS

9 PIN 80 COLUMN		CPS	£
STAR	LC-10	144/36	125
STAR	LC-10 colour	144/36	166
STAR	LC-10 colour comm 88	144/36	166
CITIZEN	120D PLUS	120/25	108
CITIZEN	120D PLUS comm 64	120/25	108
CITIZEN	PRODOT 9	300/60	270
PANASONIC	KXP 1081	144/36	122
PANASONIC	KXP 1180	192/36	139
MAN TALLY	MT 81	130/26	107
OLIVETTI	100SPR	200/30	119
OLIVETTI	DM 105SPR colour	200/30	159
EPSON	LX 400	180/30	135
HYUNDAI	HDP 910	180/34	134

9 PIN 136 COLUMN		CPS	£
STAR	LC-15	160/45	255
CITIZEN	PRODOT 9x	300/60	345
PANASONIC	KXP 1592	216/45	255
HYUNDAI	HDP 920	180/34	214

24 PIN 80 COLUMN		CPS	£
STAR	LC24-10	170/57	195
CITIZEN	SWIFT 24	160/53	239
CITIZEN	PRODOT 24	200/60	369
PANASONIC	KXP 1124	192/63	219

24 PIN 136 COLUMN		CPS	£
STAR	LC 24-15	200/67	325
STAR	XB24-15	240/80	510

*ALL DOT MATRIX PRINTERS MARKED WITH A * INCLUDE A ONE YEAR ON-SITE MAINTENANCE CONTRACT.

A ONE YEAR ON-SITE MAINTENANCE CONTRACT IS ALSO AVAILABLE ON ALL OTHER DOT MATRIX PRINTERS - ONLY £16.

A FULL RANGE OF SHEET FEEDERS, TRACTORS, ACCESSORIES AND CONSUMABLES ARE ALSO AVAILABLE FROM STOCK - CALL FOR DETAILS.

WARRANTY

ALL GOODS CARRY MANUFACTURERS WARRANTIES. ON-SITE WARRANTY AVAILABLE ON ALL DOT MATRIX PRINTERS AND PCs - CALL FOR DETAILS. TECHNICAL SUPPORT AVAILABLE. E & O.E.

Goods not offered on trial basis. Goods are offered for sale subject to our standard terms and conditions of sale - available on request. WE STOCK MANY MORE PRODUCTS - CALL FOR DETAILS. LARGE STOCKS OF FLOPPY DISKS AND RIBBONS CARRIED.

TERMS

ALL PRICES EXCLUDE VAT. PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. CALL TO CONFIRM BEFORE ORDERING. STRICTLY CASH WITH ORDER. ACCESS & VISAS WELCOME. POSTAL ORDERS, CHEQUES AND BANKERS DRAFTS ACCEPTED. OFFICIAL ORDERS FROM EDUCATIONAL & GOVERNMENT ESTABLISHMENTS, CORPORATES & PLC'S WELCOME.

DELIVERY

ALL GOODS NORMALLY DESPATCHED WITHIN 24 HOURS FROM RECEIPT OF CLEARED PAYMENT - subject to stock availability.

PC'S AND LASERS £35.00
OTHER LARGE ITEMS £10.00
SMALL ITEMS £5.00
NEXT DAY DELIVERY
NEXT DAY DELIVERY
4 DAY DELIVERY



LASER & INK JET PRINTERS

			£
STAR	LASER 8	8PPM	1199
STAR	LASER 8	DUAL BA	1649
H. PACKARD	LASER ET	8PPM	1099
OLIVETTI	PO 308	8PPM	899
OLIVETTI	PO 208	8PPM	1129
MAN TALLY	MT 905	8PPM	879
PANASONIC	KXP 4050	10PPM	1099
CANON	5010	10PPM	809
MAN TALLY	MT 91	10PPM	849
OLIVETTI	TH 150	THERMAL	1229

Refer to IBM QJEWTPR



ONE YEAR ON-SITE MAINTENANCE IS INCLUDED ■ THE PRICE OF ALL THE ABOVE PRINTERS MARKED WITH A *.

A FULL RANGE OF TONERS, FONTS, MEMORY CARTRIDGES, INK CARTRIDGES AND OTHER ACCESSORIES ARE STOCKED - PLEASE CALL FOR FURTHER DETAILS.

PLOTTERS & SCANNERS

HITACHI	681	A4A2 PLOTTER	520
HITACHI	674	A4A1 PLOTTER	2149
Includes one year on-site warranty.			
PANASONIC	FL 9540	SCANNER	919
with 10 card reader, IMAGE AND OCR software			
CANON	1010	SCANNER	659
CANON	1010	scanner interface	90
CANON	1010	OCR software	308
NISCAN	1010	HAND SCANNER	109
NISCAN	1010	O.C.R. software	169

CABLES AND CONNECTIONS

PRINTER CABLE	1 METRE	6
PRINTER CABLE	3 METRE	9
MODEM CABLE	1 METRE	11
T SWITCH	2 WAY SERIAL	15
T SWITCH	2 WAY PARALLEL	19
T SWITCH	2 WAY SERIAL CROSSOVER	25
T SWITCH	2 WAY PARALLEL CROSSOVER	25
BUFFER	8K/16K LINE	79

THIS IS JUST A SMALL SELECTION OF OUR RANGE OF CABLES, SWITCHES, BUFFERS, ETC. - PLEASE CALL FOR FURTHER DETAILS.

PORTABLE P.C.'S

SHARP	4802	DO	839
SHARP	4801	HD40	1209
SHARP	5501	HD40	2349
SAMSUNG	SE2000	HD32	1109

COMPUTERS

AMSTRAD (includes monitor)

	MONO	COLOUR	EGA
	£	£	£
PC 1640 SD	811	857	104
PC 1640 DD	881	877	173
PC 1640 HD35	1076	977	966

COMMODORE STARTER PACK (includes monitor)

ALL MODELS INCLUDE ONE YEAR ON-SITE MAINTENANCE

8088; 4.77/7.16/9.54mhz; 640K ram; 3 slots; serial/parallel ports; clock; 1 or 2 360K drives; MS DOS 4.01; GW basic and manuals.

	MONO	CGA	VGA	VGA
	£	£	MONO	COLOUR
	£	£	£	£
PC 101 SD	494	609	649	796
PC 101 DD	561	690	707	796
PC 201 HD30	675	799	846	929

As PC 101 SD includes 100K 5.25 disk drive.

80286; 6/8/12mhz; 1mb ram; 3 slots; serial/parallel ports; clock; 1x 1.44mb drive; MS DOS 4.01; GW basic and manuals.

	MONO	VGA	VGA
	£	MONO	COLOUR
	£	£	£
PC 301 HD30	967	967	1126



SAMSUNG (monitor not included)

ALL MODELS INCLUDE ONE YEAR ON-SITE MAINTENANCE

8088; 4.77/10mhz; 640K ram; 6 slots; serial/parallel ports; clock; 1x 1.2mb drive; MS DOS 3.3; GW basic and manuals.

	MONO/COLOUR	VGA
	£	£
SPC 3000/1 SD	810	810
SPC 3000/2 DD	475	581
SPC 3000/3 HD20	676	784

80286; 8/12mhz; 1mb ram (exp. to 5mb); 5 slots; serial/parallel ports; clock; 1x 1.2mb & 1x 1.44mb drives; MS DOS 3.3; GW basic and manuals.

	VGA
	£
SPC 6500/1 DD	1029
SPC 6500/2 DD-HDD	1306

HYUNDAI (monitor not included)

8088; 4.77/10mhz; 640K ram; 5 slots; enhanced keyboard. Includes: serial/parallel ports; clock; 1 or 2 360K drives; MS DOS 3.3; GW basic and manuals.

	MONO	EGA
	£	£
SUPER 16TE SD	1419	150
SUPER 16TE HD30	889	889

*SPECIAL INTRODUCTORY OFFER ON SUPER 16TE SD MONO ONLY... INCLUDES 12" MONO MONITOR... £399

80286; 8/12mhz; 640K ram; 6 slots; enhanced keyboard. Includes: serial/parallel ports; clock; 1 or 2 1.44mb drives; MS DOS 3.3; GW basic and manuals.

	VGA
	£
286x SD	564
286x HD40	1119

THIS IS ONLY A SMALL SELECTION OF THE PC'S THAT WE STOCK - CALL FOR FURTHER DETAILS.

MONITORS & CARDS

Mono monitors are available with green, amber or paper white displays - please state preference when ordering.

			Price
			£
MONO	HYUNDAI	HMM1200	121
MONO	HYUNDAI	HMM 1201 FST	121
MONO	PHILIPS	BM1710	121
MONO	PHILIPS	BM1701 FST	121
MONO	SAMSUNG	MA1671 FST	121
MONO	AKHTER	MONO 141 FST	141
MONO	VGA PHILIPS	BM1749 FST	121
MONO	VGA AKHTER	VGA 14M FST	121
MONO	VGA SAMSUNG	VL2011	121
MONO	VGA SAMSUNG	VL4511	141
MONO	VGA SAMSUNG	MP1671 FST	121
CGA	PHILIPS	CM5535	141
EGA	PHILIPS	CM2010	141
EGA	SAMSUNG	CM4501	141
VGA	HYUNDAI	HDM1401 FST	141
VGA	PHILIPS	30M1809	141
VGA	SAMSUNG	CJ4561	141
VGA	AKHTER	VGA 14	141
MULTISYNC	SAMSUNG	GT4581	141
MULTISYNC	AKHTER	COM1800	141
MDA VGA CARD	with PRINTER PORT		45
MDA CGA EGA CARD			99
VGA CARD			148

CITIZEN	OSD105A WD		
CITIZEN	3.5" 1.44mb 5.25 KIT		59
CITIZEN	OSD105A WD		
CITIZEN	3.5" 1.44mb 5.25 KIT		69
CITIZEN	OSD105A WD		
AKHTER	3.5" 1.44mb AMSTRAD KIT		59
AKHTER	AMS 360A		
HYUNDAI	5.25" AMSTRAD 2000 300K ext.		79
HYUNDAI	800 INTERNAL 5.25 360K		59
TEAC	10" INTERNAL 6.25 1.2mb		69
JAVELIN	HD20		
JAVELIN	10mb XT HARD CARD 62ms		185
JAVELIN	HD30		
JAVELIN	10mb XT HARD CARD 62ms		189
WD FILECARD	HD40 40mb AT HARD 62ms		249
KYOCERA	KC 2000		
KYOCERA	20mb XT AT DRIVE 62ms 3.5		138
KYOCERA	KC 4000		
KYOCERA	40mb XT AT DRIVE 62ms 3.5		158
KYOCERA	FRAME		
AT 20	5.25" 1.44mb 3.5 hard drives		5
AT 20	HD CONTROLLER		
AT 30	XT VMA CONTROLLER		44
AT 30	HD CONTROLLER		
AT 20	XT RLL CONTROLLER		44
AT 20	FD HD CONTROLLER		
AT 30	AT VMA CONTROLLER		110
AT 30	FD HD CONTROLLER		
AT 30	AT RLL CONTROLLER		114
AKHTER	VDM124 VPRO CARD MODEM		
BT	XT VMA CONTROLLER software		135
BT	CH-1 FAX MACHINE		
FAXTEL	3500 ext. on TV		600
FAXTEL	FAX SW TCH		
DEFINITION	Auto. modems for fax or phone		69
DEFINITION	ETHERNET CARD		
DEFINITION	Novell/MS-NET compatible		140
AT 386 8mhz	MOTHERBOARD - RAM		69
AT 386 10mhz	MOTHERBOARD - RAM		199
AT 386 16mhz	MOTHERBOARD - RAM		549
PC AT CASE	FULL SIZE AT CASE		56
PC AT CASE	SMALL SIZE AT CASE		73
XT PSU	150Watt approx 45		78
KEYBOARD 84	84 KEY UK LAYOUT XT		41
KEYBOARD 100	100 KEY UK LAYOUT XT AT		52
300K RAM CARD - XT			27
2mb EMS RAM CARD - spec. XT or AT			33
DM500 SERIAL MOUSE - no. DR.HALC software			38
XT VMA CARD - 10 RS232C serial, 1000 baud max			54
AT VMA CARD - RS232C serial			54
AT RS232 CARD			19
AKHTER UPS - 250W			199
RAM CHIPS COMPRESSORS - call for prices of			
DRAMS SPS and SIMS			

THIS IS ONLY A SMALL SELECTION OF OUR HARDWARE - CALL FOR DETAILS.

Technology Centre

HOLE HOUSE FARM, BURNLEY RD, CLIVIGER, LANCS, BB11 3RF

Tel. & Fax: 0282 831900 (24 HOURS)



C5 HITS THE STREETS

No, not Sir Clive's rather daft venture into motoring, but HiSoft's somewhat delayed version ■ of Lattice C, first announced for release back in November. The powerful package features an ANSI-standard compiler, every ST C library ever released, ■ library construction utility, the WERCS resource construction set, an assembler and the MonST debugger. Lattice C 5 costs £99.95 from HiSoft on 0525 718181.

NEW ST ACCOUNTS PACKAGE

Those of you who keep an eye on what's going on in the public domain may remember Graham Hutcheon's accounts program called *Double Sentry*, released over a year ago. Now it's been updated, enhanced and generally given the works and is available ■ ■ fully-featured commercial program.

Double Sentry is, as its somewhat excruciatingly punning title suggests, a double entry accounts program that ■ suited to home accounts and in particular the VAT-registered self-employed and small companies. It generates reports on nominal ledgers, purchase and sales ledgers, debtors and creditors and so on and so on.

What it can't do is to give you any very firm idea of how to do accounting. Still, *Double Sentry* and any of the numerous paperback guides available should give you a head start for the quarterly endurance test of preparing VAT returns.

DEMON MODEM ARRIVES

The Demon 4, it's called. It's from Modern Marketing, it's manufactured in the UK and perhaps not altogether surprisingly it's a modem. It's Hayes-compatible, it incorporates the Microcom Networking Protocol 4 (MNP 4) error correction system and the MNP data compression system and ■ offers speeds up

to 2,400/2,400 bps – and up to a whacking great 4,800 baud using MNP 5. It automatically selects the appropriate speed to handle data traffic. Built in power supply? Certainly. Battery back-up, enabling it to retain settings, commands and telephone numbers? Absolutely.

I'd get one if I were you. And you can: begin by talking to Modem Marketing about its new £299 Demon 4 on 0733 371388 (voice).

NEW ACCELERATOR AHEAD

I'm told that Dave Small is hard at work on a brilliant new project. Who's Dave Small, I hear you ask. He's the man – genius might not be too strong a word – who created the rather fabulous Spectre GCR Macintosh emulator (until recently distributed in this country by HiSoft, and now by Ladbroke Computing on 0772 203166). And now he is hard at work on a 16MHz 68030 processor accelerator for the ST.

It's said to cost about the same as Spectre, too – under £500. It's not known how soon UK distribution will be arranged, but look out for the beast when it does. It'll sure as hell make your ST shift a bit!

MUDDLED ABOUT MIDI?

Most ST owners are by now somehow vaguely aware that their machine ■ the professional musician's choice. There can be few fully-equipped studios that don't have at least one ST cluttering up a desk somewhere – though, to be honest, it's more likely to be a Mega 4 than a 520 with single-sided drive.

But do you know why this is so? It's astonishingly simple, really: MIDI. Every single ST ever built features built-in MIDI in and out ports, and while the saving in expense ■ not sufficient to make the likes of Peter Gabriel and Fleetwood Mac pleased they bought Atari, the convenience sure is.

Still, there's much more to it than that. MIDI has opened up an enormous range of possibilities for the ST, as Jon Bates' series on music ■ this very publication recently demonstrated. Now you too can find out for yourself, with the relatively recent development of ST music training courses.

The latest is Micromagic, offering courses for the absolute beginner who wants to know how to get the musical most out of their ST.

Courses range from 12 weeks, ■ £448, sufficient to give you a complete grounding in the essentials, down to a week long course (£224), covering what I consider the most practical and interesting. There are two weekend courses, each priced £89.70. One is 'Recording

Techniques', which looks at microphones, mixing desk effects and the use of multitrack tape recorders. The other, 'MIDI, Synthesis and Sequencing', offers training in the basics of sound synthesis and the different types of synthesiser available, as well as explaining the principles of MIDI and its applications.

Interested? You can find out more about Micromagic's music technology training by talking to Anita Hurst on 0924 410880.

MIDI MUSIC MAGAZINE

Somewhat cheaper than a whole week-end with Micromagic is an issue of *Music Matrix*, the MIDI disk magazine. Boss Lou Nisbet claims that the *Matrix* is the "best published source of MIDI tutorials in the BASIC languages."

What can you expect for your money? Well, issue 8, for example, includes ■ full working K1 editor, 50 new Korg M1 voices and 32 new Kawai K1 voices. Issue 9 has Alun Jones' new Roland D10 editor with all functions enabled and Voice Databank software (written, I note, in HiSoft Power BASIC), as well as two banks of 64 voices for the Roland D5. The latest issue, *Music Matrix* 10, has a Kawai K4 editor demo and samples for Replay 4 with editing software.

The *Music Matrix* costs £10 per

issue from The Music Matrix, 14 Main St, East Wemyss, Fife KY1 4RU (phone: 0592 714887).

I HAVE A DREAM...

It must be said that for most of us Sound Technology's Sound Tools AT, which I briefly mentioned a fortnight ago, must remain a dream. I mean, we are talking two grand and upwards here, more than enough to pay off my Access bill. Indeed, I reckon this must be the most important development in music software/hardware in years.

So what's the big deal? The big deal is ■ stereo direct-to-disk recording and playback system with incredibly extensive editing effects and unbelievably powerful digital signal processing functions. This is the kind of kit that anyone involved in music creation using the ST would gladly kill for.

The only drawback – apart from the wallet-vacuuming price, of course – is the immense demands this technology makes on memory. Still, with the price of hard disk memory dropping like a stone this has to be the way forward. It's now possible, for instance, to buy a hard disk with over 100Mb for under £900, or a whacking great 250Mb drive for under two grand (both examples from Third Coast Technologies, 0257 472444).

Steve Carey



ST GAME OF THE WEEK

ELECTRONIC ARTS • £24.99

After a plethora of football simulators, the ball game has become positively hackneyed. Winning has become a simple matter of using the same joystick technique and growing accustomed to the speed of play. This latest game aims to change all that. Listening to programming team, Eldritch the Cat, talk about *Projectyle*, you realise that the game is a combination of such hits as *Speedball* and *Ballistik*. But with major differences in the design of the pitch and the control of the ball, don't expect it to be a slight variation on a common theme.

The avowed objective of the game is to compete in trials to win against eight opponents. These can be controlled by either computer or human. Each game is played out between three teams and in the event that three human opponents come up against each other, two players compete on joysticks and a third plays using the keyboard.

The pitch is split into five sections – a central arena leading off to four outer sections. Three of



PROJECTYLE

©1990 ELDITCH THE CAT
ELECTRONIC ARTS

these four sections have a goalmouth for each player and the fourth section is appropriately called the frantic zone. In this area there is a goal for all three players. To score at the game you need to do your best to keep the ball out of your section. If it strays in then hang around the goal and wait to boot the ball out. In the frantic zone the action really hots up and goals can be scored over and over again.

The ball control in *Projectyle* is seriously manic. A click on the fire button sends you hurtling into the ball, while movements on the joystick produce only subtle changes

in direction. As a result, there is often a sizeable amount of luck involved in winning the tournament. An ardent gamers or a computer novice can be just as frightening opponents if luck is against you.

Projectyle features super-fast eight-directional scrolling which is a major achievement for the ST. A variety of different playing arenas makes each game different and with effective spot effects, it's remarkably absorbing. The element of luck involved can be frustrating at times but that doesn't stop this from being the most addictive ball game since *Speedball*.

Mark Higham



• The Demon 4: one hell of a modem.

BEST

- Bargains
- Advice
- Prices
- Offers
- Jobs

SHOPPING

EXPRESS

The *weekly* computer market place for people *serious* about buying

THIS WEEK'S BUYERS' GUIDE

WORD

PROCESSORS

**A comprehensive
review of the best
software
for your machine**

JOB SHOPPING?

Check out our
recruitment section inside

ALSO INSIDE

● **Take**
advantage of our
latest mail order offers.

● **Benefit**
from our reliable buy-
ers' guides. No waffle,
just facts.

● **Pick up**
bargains galore from
dealers and readers
from all over the UK.

● **Score**
on the free reader
adverts. Sell your prod-
ucts for *absolutely no
charge!*

Save your cash
save your time

DOLAN ELECTRONICS LIMITED

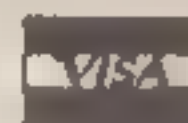
DANFFORDDGAR HOUSE
CARMARTHEN, DYFED
SA32 7DU.

SALES: 0267 234444

FAX: 0267 231863



all prices ex VAT & Delivery
CWO or COD available



specifications subject to change.

£399!**12MHz XT**

- ★ 640Kb RAM expandable to 1Mb on board
- ★ 12MHz CPU switchable to 4.77MHz
- ★ 102 Key Keyboard
- ★ 360Kb 5 1/4" Floppy Drive
- ★ 2 Serial Ports
- ★ 2 Parallel Ports
- ★ Real Time Clock/Calendar
- ★ 5 Free Expansion Slots
- ★ Hercules Graphic Card & High Res Mono Monitor
- ★ EZ-DOS vers. 4.01 & Basic
- ★ Full Set of Manuals & Documentation

Single Drive 12" Green Mono System £399
40Mb 30Ms 12" Green Mono System £599
14" Flat Screen Paper White Mono .. add..£35
14" EGA Colour Monitor add..£226
720Kb 3 1/2" Floppy Drive..... add...£65
640Mb to 1Mb RAM Upgrade..... add..£45

£2195!**33MHz 386**

- ★ 4Mb RAM expandable to 16Mb on board
- ★ 33MHz CPU Landmark Speed 44MHz w/32Kb Cache
- ★ 102 Key Keyboard
- ★ 1.2Mb 5 1/4" & 1.44Mb 3 1/2" Floppy Drives
- ★ 45Mb 25Ms Hard Drive w/1:1 Interleave 32Kb Cache
- ★ 2 Serial Ports
- ★ 2 Parallel Ports
- ★ Real Time Clock/Calendar
- ★ 5 Free Expansion Slots
- ★ Super VGA Card w/512Kb RAM 1024x768 High Res Mono Monitor
- ★ EX-DOS vers. 4.01 & Basic
- ★ Full Set of Manuals & Documentation

Complete System Mono £2195
Complete System VGA Colour £2345
Complete System Super VGA Colour £2495
130Mb 18Ms Hard Drive Upgrade add...£350

£795!**16MHz 386-SX**

- ★ 1Mb RAM expandable to 8Mb on board
- ★ 16MHz CPU switachable to 6MHz
- ★ 102 Key Keyboard
- ★ 1.2Mb 5 1/4" & 1.44Mb 3 1/2" Floppy Drives
- ★ 2 Serial Ports
- ★ 2 Parallel Ports
- ★ Real Time Clock/Calendar
- ★ 5 Free Expansion Slots
- ★ Super VGA Card w/256Kb RAM High Res Mono Monitor
- ★ EZ-DOS vers. 4.01 & Basic
- ★ Full Set of Manuals & Documentation

Dual Drive Mono System as above £795
20Mb 40Ms Mono System £995
45Mb 25Ms Mono System w/32Kb Cache £1145
14" VGA Colour Monitor add...£200
14" Super VGA Colour Monitor add...£350

MISCELLANEOUS

XT 40Mb 40Ms Hard Drive Kit £199
XT 40Mb 40Ms Hard Card £215
AT 45Mb 25Ms Hard Drive £275
60mb Internal Tape Backup £450
60Mb External Tape Backup £425
360Kb 5 1/4" Floppy Drive £40
1.2Mb 5 1/4" Floppy Drive £55
720Kb 3 1/2" Floppy Drive £65
1.44Mb 3 1/2" Floppy Drive £85

Microsoft Windows vers 2.03 £25
Logotron 8 in 1 software £30
Genius Mouse w/Dr-Halo Software £35

The **DOLAN COMPUTERS** have the reliability, performance and price that leaves the competition standing. Our professional quality systems come fully configured and ready to run. The DOLAN COMPUTERS were the outright winners in a recent survey of over 50 computers.

The DOLAN COMPUTER range are unbeatable on specification and price.

THE SHOPPING EXPRESS GUIDE TO THE TOP WORD PROCESSORS

The most vital piece of computer software for most serious users is the word processor — many use their micro for nothing else. Here is the Express verdict on the best you can find for every machine

The most popular use for the micro is as a word processor. Its uses are many and everyone can benefit from it at one time or another.

Whether you intend to write to the *Times* as 'Angry of Pinner', write to thank Aunt Elspeth for the vellum bound copy of *Pilgrim's Progress* or send Jeffrey Archer running for the smelling salts with your latest thriller, a word processor is for you.

First things first, what is a word processor? It is an applications program that runs on your micro allowing you to use it as an intelligent typewriter. You can see the results of your typing before you print it and can correct mistakes, manipulate text and format documents on screen.

There's no need to print your document there and then, as it can be saved to cassette or disk and retrieved later for further additions, editing or printing.

The beauty of word processing is that you can set up and save commonly used layouts and letters and load them when needed to avoid repetitive typing.

Most word processors allow you to change margins and reformat text and any number of tab settings can be incorporated.

Common series of commands or keystrokes can be incorporated in macros in most word processors, allowing multiple commands at a single keypress. This is also useful for saving strings of text. Commonly used phrases, addresses and phone numbers can be assigned to a macro.

The more comprehensive (for which read 'more expensive') word processors generally have spelling checkers, mail merge facilities, word counters, and some of the better ones can even display italics, bold type face and different text sizes on the screen.

The ability to present the document on screen as it will appear on paper is known as WYSIWYG (What You See is What You Get) and this feature is becoming 'standard' on new software.

To combine a letter with names

and addresses is a database is called mail-merge and is especially useful to businesses who wish to send the same letter to different clients, or perhaps a student wanting to tailor a curriculum vitae to suit prospective employers.

Page numbering and titling can be handled by most programs, and some even allow footnotes, bibliographies and indexing to be incorporated.

As word processing becomes more advanced, features such as importing graphics, working on several documents at once and calling lists from databases increase the efficiency of a simple typist or a large multinational. We all need to write at some time, and the word-processor takes some of the drudgery out of the task.

This is the Express guide to the word processors available for each machine with a brief description of each. Prices shown include VAT.

PC WORD PROCESSORS

● KWORD 2

Kuma
£39.95

Budget-priced word processor with on-screen features such as bold and italic. Runs within GEM and can have up to four documents open in on-screen windows simultaneously.
0734 844335

● MANUSCRIPT 2.01

Lotus
£454.25

The heavyweight for the technical author. Not a general purpose WP. In a sense, it is more of a giant outline processor for imposing clear and flexible structures on complex documents. Handles cross-referencing, equation definition and tables. Imports Freelance and Graphwriter graphics and allows page previewing. Requires hard disk.
0753 32443

● MULTIMATE ADVANTAGE 2

Ashton Tate
£450

Primarily a secretarial package. Included are sophisticated mail merge functions, a card index database, a thesaurus and a 110,000-word spelling checker. Macros and line drawing possible. Choice of keyboard or menu control. Hard disk recommended.
0628 33123

● MULTIWRITER 2

Newstar
£114.95

Regarded as a relatively modestly priced WordStar clone, Multiwriter 2 offers macro learning and language facilities and can import WordStar, WordPerfect and Multimate files. Has mail merge, word counter and spelling checker.
0245 265017

● NEW WORD 2.18

Newstar
£114.95

Highly customisable and well respected WordStar-style WP with powerful mail merge, plus spelling checker and word counter. Uses the same keystrokes that WordStar enthusiasts know and love.
0245 265017

● OLITEXT PLUS 2.0

Olivetti
£355

A fast word processor with math and macro functions. Contains a pull-down notepad and calculator. WYSIWYG.
081-785 6666

● CELEBRITY

Software Paradise
£80.50

An unusually well implemented word processor for the beginner. Uncompromising attempt at a comprehensive suite of programs with a thesaurus, spell checker and the ability to open four text windows.
0222 887521

● PC WRITE 3.0

Sagesoft
£114.95

Footnotes, contents, mailmerge, multi-column, and other features make this under a hundred good value. Runs a little slow at times but is a good middle of the road program.
091 213155

● PROTEXT

Amor
£100

Widely respected, not least among journalists, Protext stands out for its abilities in text and file handling. Built-in mail merge facilities are so powerful that it forms programs of its own. Choice of prompted word commands or menu system. Spelling checker; editable printer drivers.
0733 68909

● SPRINT 1.01

Borland
£172.50

An unusual and innovative package. Has drawbacks, including not being WYSIWYG, but offers emulations of common WP user interfaces (including WordPerfect, WordStar and Microsoft Word) plus full programming language for writing your own. Allows up to six windows on 24 documents. Saves changes while you type!
0734 320022

● SUPERWRITER 1.03

Computer Associates
£224

A fairly simple to use well functioned word processor with mail merge and spell checking facilities.
0753 77733

● TASWORD PC 1.17

Tasman
£49.95

Dead simple and cheap enough but damn slow. A domestic solution to a commercial problem.
0532 438301

DATAPLEX

29 Bath Road
Berkhamstead
SL1 3UW

19 High Street
Swindon, Wiltshire
Tel: 0793 488448

Showroom open

Monday Friday 9.30-5.30 Saturday 9.30-4.30
All prices excluding VAT and delivery

AMIGA HARDWARE

Amiga 500 + Batman Pack & 5 games, joystick £345.00
New Amiga Flight of Fantasy Pack - £317.00

AMIGA BATMAN PACK £317

New from Amiga

Includes: TV modulator, 3.5" Disk Drive with Amiga
DOS Kickstart, Workbench and Batman The Movie
game, F18 Inceptor, Paint 2, New Zealand Story.

AMIGA ACCESSORIES

Inc. database, spreadsheet, WP, music, art &
design, logo and BBC emulator.

Amiga Class of the 90's.....£439

Amiga A501 RAM pack + Clock (original).....	£85
Amiga joystick	£10
TV Modulator.....	£15
Phillips CM8833 colour monitor	£199
Phillips BM7502 12" green monitor.....	£79
Phillips BM7522 12" amber monitor.....	£89
Amiga To Philips cable.....	£8

AMIGA DRIVE

1 Meg 3.5" external.....	£68
1 Meg 3.5" internal	£63
1 Meg 5.25" external	£99

ATARI DRIVES

1 Meg 3.5 external	£68
1 Meg 5.25 external	£99
1 Meg 3.5 internal	£63

ATARI COMPUTERS

520 STFM Discovery Pack	£248
520 STE Power Pack.....	£325
1040 STE.....	£378
1040 STE Power Pack	£385

SCANNERS

Atari Scanner.....	£169
Amiga Scanner	£169

MOUSE

Naksha mouse.....	£29
-------------------	-----

STAR PRINTERS

Star LC10 mono.....	£135
Star LC10 II mono	£159
Star LC10 colour.....	£168
Star LC2410	£219
Star LC15 9 Pin 136 column.....	£264
Star LC2415 24 Pin	£328

PANASONIC

Unbeatable Prices!

Panasonic 1081	£125
KXP 1124	£219
KXP 1180	£144

CITIZEN PRINTERS

Citizen 120D.....	£120
Citizen 180E.....	£127
Swift 24	£255
Colour upgrade for Swift	£42

MANNESMAN TALLY

Mannesman MT 81 Dot Matrix.....	£115
Mannesman Sheetfeeder.....	£62
Mannesman Serial Interface	£49

REPAIRS FOR AMIGA AND ATARI

● TOPCOPY PLUS 3.0

Top Level Computing
£109.25

Up to three windowson six documents,
pull-down menus, speller, word counter
and all the normal word processing
features. Imports ASCII and WordStar.
Can run memory resident as a pop-up
0453 753944

● WORD 5.0

Microsoft
£395

A very good, sophisticated heavyweight
word processor with excellent
outliner, plus style sheets, maths,
macros, and up to eight windows on the
screen at any one time.
0734 500741

● WORDPERFECT 5.1

Word Perfect UK
£494.50

Not cheap, but this top-selling WP is
generally regarded as superb. Lacks
outlining, but among numerous
attractive features are three-level undo
facility, graphics importing and editing,
macro facilities and on-screen
columns. OS/2 version costs £575.
0932 850500

● WORDSTAR
PROFESSIONAL 5

Micropro
£399

Years ago it became the 'standard word
processor'. It has many features, and
'WordStar' keystrokes are the standard
by which other packages are judged.
Version 5 offers an improved interface.
It is a pity that such a popular package
is still seriously flawed.
081-643 8666

● WRITER 1295

Logotron
£12.95

The low price of this budget software
more than makes up for the snail's pace
of its spelling checker.
071-359 3594

AMIGA WORD PROCESSORS

● PROTEXT

Amor
£99.95

Protext is an easy to learn word
processor with powerful text handling
and file manipulation. The mail merge
facilities are so comprehensive that you
can look on the stored commands as a
programming language for mail
housekeeping. A good spelling checker
and available on many other machines.
0733 68909.

● KIND WORDS 2

Amiga Centre Scotland
£49.95

Seemingly good value word processor
for under fifty quid. Spell checker
included and also the ability to import
graphics. The current version includes A

dictionary, thesaurus and various fonts.
If you intend to upgrade to DTP, it's
worth seriously considering contacting
HB Marketing on 0753 686000 who
include Kind Words in their 'Publisher's
Choice' DTP package under £100.
031-557 4242

● SCRIBBLE
(PLATINUM
EDITION)

HB Marketing
£49.95

The updated and upgraded version of
the already popular Scribble. Very
simple to use and with a spelling
checker and mail merge facility. Text
can be reformatted as you type. No
graphic functions but very simple to
use.
0753 686000

● WORDPERFECT

WordPerfect UK
£293.25

WordPerfect is a full featured
heavyweight word processor with a
price to match. This almost £300
package includes over 500 pages of
manual and a huge dictionary /spelling
checker/thesaurus. A Command line
interpreter can be called from within the
program simplifying the running of
multiple environments.
0932 850500

ST WORD PROCESSORS

● FIRST WORD PLUS 3

Electric Distribution
£79.95

First Word comes bundled with the ST
and for that reason, First Word Plus
makes a logical upgrade with its ability
to handle graphics and capture screens
directly in the Degas format. Many good
features such as column printing, mail
merge, and a spelling checker, but the
operation can be tedious. The current
version contains a well specified index.
0480 496789

● WORD WRITER 1.0

Electric Distribution.
£49.95

What you see is what you get
(WYSIWYG) The spelling, merging and
thesaurus of this program are well
integrated and in all the program is
easy to use. There are user definable
routines and an intuitive typist will soon
come to grips with it. There is no
graphic importation facility and
combining layouts in the same
document is awkward.
0480 496789

● PROTEXT

Amor
£99.95

Protext turns up on all of the popular
machines and for sheer ability at
handling text and files, takes a lot of
beating. The same things that apply to
the Amiga version, also apply to the ST
Fully keyboard driven, ST Protext kicks
the GEM environment out in favour of its
own.
0773 68909

BUILD IT YOURSELF!

MOTHERBOARDS

XT TURBO

12MHz, V20, 0k, 8 slots. Small size, takes 256k x 4 DIL.

£62.10 + £4.50 p&p

AT TURBO

12MHz, 0k, up to 4 M on board. Seven slots, takes 256k x 1, or 256k x 4, or 1M x 1.

£158.00 + £4.50 p&p

AT TURBO PLUS

12MHz, up to 4M on board. Eight slots, takes 256k x 4 or SIPs. EMS fitted.

£188.00 + £4.50 p&p

"SKELETON" SYSTEMS

These systems include case, 180W PSU and motherboard, fully assembled. You add memory, keyboard, display, floppy drive and adapter cards.

12MHz XT**£155**

12MHz AT**£250**

16MHz AT**£305**

Carriage £10

CASES

XT/AT CASE

Space for three 5.25" floppy/hard disk drives and one 3.5" drive.

£44.50 (+ £6 p&p)

180W PSU **£44.85** (+ £3 p&p) (Suits budget case)

DE-LUXE CASE

Same disk space but prettier! Speed display.

£65.00 (+ £6 p&p)

MINI TOWER CASE

As DE-LUXE case but desk-top tower style.

£72.50 (+ £6 p&p)

200W PSU **£69** + £3

PC-DIY BOOK

If you are not sure how to go about building your own PC, this book is for you. 112 pages full of DIY tips for £7.95 including postage. (No VAT)

VAT is INCLUDED in all our prices.
Why not telephone or write for our
FREE catalogue?

DISPLAY ADAPTORS

UNIVERSAL VGA

This board auto-switches between 8 and 16 bit, drives mono, EGA and VGA monitors, (in native mode) and supports all standard VGA modes. Easy upgrade to extended VGA to give 1024 by 768.

£137.00 (+ £2 p&p)

DUAL CGA/HERC

Auto-switch, plus port for printer.

£38.00 (+ £2 p&p)

102 keyboard **£46**
+ £6 p&p

I/O ADAPTORS

RS232 short card

£16.10 (+ £2 p&p)

SERIAL/GAME/ PARALLEL CARD

Sockets for serial 2

£14.50 (+ £2 p&p)

FLOPPY CONTROLLER

for XT or AT, 360, 720, 1.2, 1.44. Two drives 3.5" or 5.25".

£24 (£2 p&p)

BLACKMORE ELECTRONICS LTD

4 THE PLOCKS

BLANDFORD FORUM, DORSET, DT11 7AA.

ALL MAJOR CREDIT
CARDS ACCEPTED BY
POST, TELEPHONE
OR FAX

Telephone: (0258) 451347

Fax: (0258) 456046



DOUBLE SENTRY

The Accounts Program for small businesses using Atari ST Computers

NEW! Ver 1.7 - STILL ONLY £28.75!



- ★ Full featured and *FAST* accounting package written specifically for the Atari ST.
- ★ Runs on all Atari ST computers using GEM high or medium resolution.
- ★ Requires only 1 double-sided disk drive.
- ★ All data is held in memory giving very fast access to information for the production of reports with no need for disk access.
- ★ Depending on RAM size and disk space, up to 9,999 Sales Accounts 9,999 Purchase Accounts and 9,999 Nominal Accounts.
- ★ Full reports available including Nominal Ledgers, Purchase and Sales Ledgers, VAT Return (conforming to the new VAT Return forms effective as from 1st January 1990), Aged Debtors and Creditors, Bank Reconciliation, Day Books, Trial Balance, Profit & Loss and Balance Sheet.
- ★ Reports covering more than one quarter do not need to access a previous quarter's data disk.
- ★ Printed reports are Epson compatible.
- ★ Bank and VAT Accounts automatically updated.
- ★ Built-in calculator with the facility to "insert" the result of a calculation into a data entry screen.
- ★ Automatic calculation of VAT amounts - either by addition or extraction - while entering data.
- ★ Built-in data back-up facility.
- ★ Instant "snap shot" Liquidity report.
- ★ VAT percentage rates easily amended if in the future they are changed, but safeguarded against accidental alterations.
- ★ **NEW with Version 1.7 - slick and speedy STATEMENT GENERATOR!**
- ★ Helpful and informative manual with descriptive examples allows first time users to get started immediately.

Demonstration disk available for only £5.00 inc VAT - deductible from the full purchase price if the demo disk is returned with your order. Registered users have direct access to a telephone support line.

"...user friendly and well thought out... deserves to do well." - *New Computer Express*

Payment by cheque or PO made payable to

"GRAHAM R HUTCHEON" - sorry, no credit cards.

Available only by mail order for £28.75 (inc VAT) from:

Graham R Hutcheon

45 Connaught Street, London W2 2BB

COMPUTACHAT

Are you a computer games player, programmer, musician or artist?

Would you like to talk to others like you to swap hints, tips, pokes or even software (must be originals or PD).

Are you interested in forming a group to buy blank disks or cassettes in bulk or would you just like to chat in general about computer orientated activities.

**RING COMPUTACHAT ON
0898 338939**

EXPERTS ON HAND TO ANSWER ADVENTURE QUERIES

TME PLC, Box 54, South West Manchester M15
Calls charged at 25p/min "cheap" rate - 38p at all other times

ADVENTURE HELPLINE

Do you play computer adventures? Have you ever been faced with a seemingly impossible situation?

WE CAN HELP

Our adventure rescue team work 7 days a week until midnight and will be pleased to answer your queries. We offer help with any games or any computer - so if you are tearing your hair out ring this number NOW!

0898 338 933

T.M.E Plc 10b Hulme Hall Road, Manchester M15 4LY

Calls charged at 25p min "cheap" rate/38p at all other times

A + P COMPUTERS LTD

CHEAPEST! RELIABLE! BEST!

IBM PC COMPATIBLE SYSTEMS

SYSTEM 1 XT, 640K, 360K FD, S/P/G/RTC Mono	£395
SYSTEM 2 System 1 + 20MB HD	£595
SYSTEM 3 AT-286, 640K, 1.2M FD, S/P Mono	£575
SYSTEM 4 System 3 + 40MB HD	£825
SYSTEM 5 386-20MHz, 1MB, 1.2M FD, S/P, Mono	£965
SYSTEM 6 System 5 + 40MB HD	£1295
Upgrade to colour please add the following:-	
CGA 14" Colour Monitor + CGA Card	£185
EGA 14" Colour Monitor + EGA Card	£275
VGA 14" Colour Monitor + VGA Card	£325

PRINTERS from £129, DFI Scanners HS 3000+	£169
VIDEO FRAME GRABBER for PC	£149

Call us for the lowest price on any I/O cards eg printer card £12, cga card £28, exp card £28, 150W Psu £45, 220W Psu £55, XT M/B £55, XT Case £58, ST 225 £155, ST251 28ms £255, JUMBO Tape Streamer £265, DFI VGA from £95, DFI mouse DMS 200E £45, etc.

We will build a computer to your specification at no extra cost - fully tested and guaranteed.

REPAIR YOUR PC AT LOW RATE + 6 MONTHS WARRANTY.

1 year warranty on all computer systems.
All prices exclude delivery and VAT charges.
Specs and prices may be changed without notice.

A + P COMPUTERS LTD
35 WALNUT TREE CLOSE
GUILDFORD, SURREY GU1 4UN
TEL: 0483 304118
FAX: 0483 304124

VISA

● THAT'S WRITE

Cavendish
£99.95

This popular program puts the emphasis on the printed word and produces excellent hard copy. You can design a font, grab a screen or utilise the auto-indexing feature. There are many unique features but the manual is quirky and the WYSIWYG display has some weird fonts on screen.
071-323 4761

● WORDUP

HB Marketing
£59.95

More a document processor than a word processor, Wordup is the first step toward DTP having features such as graphics, text flow, graphic import, type sizes and styles. Ideal for producing newsletters and impressive documents. Unfortunately, there is no way of importing other fonts and a spelling checker is noticeable by its absence
0753 686000-

PCW WORD PROCESSORS

● LOCOSCRIPT 2

Locomotive Software
£25 including p&p

LocoScript 1 is bundled with the PCW8256 and 8512. LocoScript 2 comes free with the PCW 9512. Therefore the obvious upgrade for PCW 8256 and 8512 owners who want a little more speed and support for foreign character sets is LocoScript 2. They still haven't remembered the word counter and it still works at the speed of a snail in reverse but some people cut their teeth on Locoscript and will probably like it.

Strange that Locoscript 2, with all its fonts and foreign symbols and graphics abilities, is bundled with a computer with a daisywheel printer that has no need or use for it.
0306 740606

● PROTEXT

Amor
£59.95

Protext PCW works under CP/M and is mobile between PCW and CPC computers (The same disk works in both, honest!). A stalwart user of Locoscript may grumble for a few seconds but the lightning fast file handling will soon produce another convert. Mail merging, column printing, two file editing and with an in-built spell checker. Using the M: drive becomes faster than a speeding bullet.

If you own a PCW and you haven't got this program, you are wasting your machine's potential.
0733 68909

● MINI OFFICE

Database
£30.00

Mini Office is a five-piece applications package of which the word processor is just one part. If you only type the occasional letter, want to store the family finances in a spreadsheet and catalogue your records in a database,

buy it. If you have serious word processing in mind, it is probably not your best choice.
0625 878888 or 051-357 2961

● NEWWORD

Newstar
£70

A WordStar clone for people who were trained on that standard word processor and are unwilling to change. Flexible and powerful, but probably best left to those addicted to the original it is based on.
0245 265017

CPC WORD PROCESSORS

● PROTEXT

Amor
£19.95 Tape
£26.95 Disk
£39.95 Rom

It is worth buying a Romboard and Protext, for the sheer enjoyment of instant loading non-memory-resident software. A couple of keystrokes and the program's there. No waiting around while tapes chunder or disks whirr. File size is limited to 22K (disk version) or 38K (ROM Version) but 38K is plenty long for a chapter of a book, so it isn't a real restriction. A straw poll of the journalists on Amstrad Action revealed that they were all using Protext on ROM. Enough said.
0733 68909

● MINI OFFICE 2

£14.95 Tape
£19.95 Disk

Part of the five-piece applications suite, the word processor is OK for the occasional letter but not really a contender for the hard work stakes. Bundled with database, spreadsheet, graphics and comms, it is very good value for fifteen quid, but only for occasional use.
0625 878888

● TASWORD

Tasman
£19.95 Tape
£24.95 Disk

Different versions for the 464, 664, and 6128 use the machine's features to the best advantage. The disk versions include a mail merger, and printer control is easy. An easy to drive program with a slightly slow text-handling ability but nonetheless, excellent value. A separate menu customises the program to run to your specification.
0532 438301

● BRUNWORD

Bruning Software
£30 6128 disk
£25 464 disk

A word processor, spelling checker and card filer that work in 40, 80, and 128 column modes. This excellent program is easy to learn, good value and just sneaks past Tasword as second in the CPC stakes. This one would be ideal for a small club or society who wanted to update their membership using a simple data filing system.

AN EDITED COMPANY PRESENTS

TOMB OF
DEATH

**TEL: 0898
1006-34**

*Are you brave enough to
challenge the forces from hell?
Can you outwit the monsters
of evil who haunt this
Tomb Of Death?*

*If so ring 0898 1006-34
for the adventure of your life!*

KEENHELM, BOX 256, NN1 4LA

CALLS COST 25p / min CHEAP,
38p ALL OTHER TIMES

12Mhz AT MotherBoard
AMI BIOS Expandable to 4MB **Only**
WITH 1MB RAM £149

TRIDENT 16 BIT VGA
Expandable to to 512k **Only**
Supplied with 256k **£89**

HANDY SCANNER/OCR
A4Scan Handy Scanner **Only**
Includes Image72 and **£139**
the AIOCR Software

NETWORK CARDS
NE2000 Compat. £139
NE1000 Compat. £109

A4MOUSE
Microsoft compatible - Dynamic resolution
Includes: Image72 Software, Mouse Pad,
Mouse Holder, Menu-Maker, 9-25 Adapter **£25**

AT/XT Enhanced Keyboard (Switchable) **£42**
Parallel Printer Card **£11**
Serial Card (Expandable to 2 ports) **£14**
25Mhz 486 Motherboard with 64K Cache **£1699**
Can't see it ? then telephone 0279 600529



GRAHAM COMPANY (GB) LTD

UK Office: Unit D, The Maltings, Sawbridgeworth, Herts, CM21 9JX
Taiwan Office: 6Fl, 568 Min Chuan East Rd, Taipei, Taiwan, R.O.C.

Tel: 0279 600529
Tel: 886 2 712 1437

Fax: 0279 600518
Fax: 886 2 713 1948

**ACCESS
& VISA
Accepted**

**QL
FROM
£90****E.E.C. LTD****PRINTERS
FROM
£50**QL BACK UP, WITH P.S.U. etc., JM ROM £90
QL BACK UP, WITH P.S.U. etc., JS ROM £100**QL COMPLETE AS NEW 2.35 SOFTWARE**JS ROM with Quill, Abacus, Archive + Easel£135
Same with JM ROM£120
90 days warranty on above items**★ SPECTRUMS AS NEW ★**

Plus 2 - £109.95 Plus 3 - £149.95

★ PRINTER CLEARANCE ★

- ★ ALPHACOM 32 with 1.Face & PSU for SPECTRUM£49.95★
ALPHACOM PAPER 1 ROLL £3.50, 5 Roll Pack£12.95
- ★ SEIKOSHA GP 100A Dot Matrix 80 Col., 50 cps.....£79.95 ★
Tractor Feed, ideal for QL with Centronics Interface£24.95 only extra
- ★ STAR NL 10 Dot Matrix 120cps. NLQ 30cps 80 Col Tractor & Sheet Feed
Serial Interface - supplied with Free lead for QL & Spectrum.....£140.00
(Interfaces also available for Centronics and IBM PC's)

★ COMMODORE BARGAINS ★

- ★ **BROTHER HR10** Letter Quality Daisywheel 2K Buffer
Tractor Feed, 80 Col., 12 cps. CBM Lead free.£129.95 ★
- ★ NL 10 Dot Matrix 120 cps. NLQ 30cps 80 Col Tractor & Sheet
Feed with Commodore Interface Supplied with Free Lead.....£140.00 ★
- ★ **MICRODRIVE EXPANSION KIT★**
Includes Microdrive, Interface 1, Booklet, Network lead,
intro, cartridge and flex connector£69.95

EXTRA MICRODRIVES (New)£24.95
EXTRA MICRODRIVES (Reconditioned).....£16.95**CARTRIDGES**

Walleys with 4 cartridges : - £16.00 Boxes of 20: - £60.00

INTERFACE 1 CONNECTORS AND LEADS each £3.50

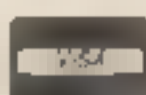
PRINTER (RS232) LEADS FOR INTERFACE ONE.....£12.95

POWER SUPPLY UNITS 48k Std£8.95

POWER SUPPLY for Heavy Duty or 128K£10.00

POWER SUPPLY for Heavy Duty or 128K + 3£18.00

POWER SUPPLY for QL or Commodore.....£22.00

★ Min. Orders £10.00. £6.00 Carriage - Printers and Micros. £3.00 other items P & P UK
Overseas add £15.00 Printers etc. £5.00 others. Terms CWO or Visa/Access.
All offers subject to availability.Orders to EEC Ltd. Dept NCE 1,
18-21 Misbourne House, Chiltern Hill,
Chalfont St Peter, Bucks SL9 9UE. Tel: 0753 888866**ONCE BYTTEN**

39 Marling Way, Gravesend, Kent DA12 4DW

Tel: 0474 567964 FAX 0474 537172

Mon-Sat 10am-8pm Callers by appointment

**PLEASE NOTE OUR NEW
ADDRESS & PHONE NO.****LOCOSCRIPT PC EST ARRIVE, 3/DEC.**

LOCOSCRIPT PC PC version of the famous Locoscript WP programme. A fully integrated Word Processor, Mail-Merge, Database, Report Writer & Spell Checker. All in one user-friendly bundle. Type in any European language including Russian & Greek- on any PC. Full range of scientific and maths symbols.

ONLY £125.00 or £99.00 upgrade from any Locoscript version. - Phone for details

PROFEX

The superb range of PROFEX PCs are coming into stock now. This brilliant series of machines from West Germany start from a 12Mhz 286 on up to a 486 25Mhz. That's impressive, what's more impressive is the prices. The first to be available is the PC33. This is a 12Mhz AT 286 with 33Mb HDD 1x3.5" & 1x5.25" FDD, MS-DOS 3.30, VGA graphics & VGA Colour Monitor for only £1099 + vat.

The PROFEX range includes printers, cards, monitors, and discs. Please ask for details.

FAX MACHINES

Working from home or starting a business? Our FAX prices will get you on line quickly.

For example:

Funai PFX 5800 9600baud G3 fax with telephone only £399 + vat
British Telecom CF9 FAX with Viscount phone and answering machine. All three items only £499 + vat

CARRIAGE Carriage is extra on all the above items. Software £2.50 Small Hardware £5.00 Computers, Monitors, Printers £8.00 courier delivery. Maximum charge £24.00

AMIGA 2000 UPGRADE

Don't forget that the 2000 upgrade offer from Commodore is still available. To refresh your memory: If you give us your A500 or A1000 with PSU & mouse you can have a brand-new B2000 Amiga with 1Mb chip-RAM. Fatter Agnus, 40Mb A/Boot HDD and 2Mb RAM board (Ok fitted) for only £1099.00 inc VAT

PROFEX HD3300 for A500

This 33Mb Autoboot Hard Drive from West Germany is now available from stock. It is a beautiful slimline case with a separate PSU (a la A590) but only costs £349.00

GVP products for Amiga 2000

GVP items currently in stock include: A3000 28Mhz 68030/68882 Processor Board at only £899.00
IMPACT 40Mb Quantum 11ms Hard Card with 2Mb RAM (Ok Fitted) £550.00

Please ask for details and pricing of any products you don't see here, if we haven't got it we can always get it - fast.

PART EXCHANGE

We are part-exchange specialists and are always interested in 'doing a deal'. Please ask for Keith McGovern our Trade-in specialist. He will also make you an offer if you want to sell any equipment.

C64 WORD PROCESSORS**● EASY SCRIPT**

£50

Mail Order Only

It's a good round word processor that's no longer in production. Mail order houses are your best bet to find it. It only works in 40 column mode but has many features and is easy to drive. Good Value.

● PAPERCLIP

£50

Mail Order Only

This is reckoned to be the best C64 word processor around. It can work in 40 or 80 column mode, has a spelling checker and the facility to write your own macros. Two document working is supported and the only thing going against it is its lack of suppliers. Difficult to find but worth the effort.

SPECTRUM WPS**● TASWORD**

Tasman Software

£13.95 Plus 2

£19.95 Plus 3

The only serious contender in the Spectrum market for a long time was Tasword. Tasman has catered for each different machine by producing different machine specific versions for 48 and 128K Spectrums and with tape and disk versions available. It runs very slowly at times, but puts the Spectrum firmly on the word processing map and has options to customise and speed up the routines. Plenty of help on screen and mail merging as well.
0532 438301

● RAM WRITE/RAM PRINT

Datal Electronics

£34.99

The RAM Write/RAM Print add on cartridge for the Spectrum is a ROM based word processor and printer driver which attaches to the expansion port and as well as giving the Spectrum user an instant word processor from its inbuilt EPROM, it also has a joystick port to allow the demise of a few aliens after a hard session of word-smithery. As it only lives on a 16K ROM which contains a parallel printer driver as well, it isn't as well specified as Tasword, but for pure convenience of use has to be a bargain.
0782 744707.

BBC WORD PROCESSORS**● WORDWISE PLUS**

£56.35

Computer Concepts

An early offering for the Beeb that works in 40 column mode. 80 columns can be seen in preview mode. Very quick and intuitive. Plenty of help in the manual and a facility for embedded print codes, but be prepared to work at it. Macros are supported, and it is also available in the instant-load ROM format.
0442 63933

● INTERWORD

£56.35

Computer Concepts

Part of the 'Inter' integrated suite of programs. An easy to use 80 column word processor with spelling checker. ROM versions of the whole 'Inter' range available.
0442 63933

● VIEW 3

MicroPower

£44.95

This ROM-only 80 column word processor limits the size of document that you can use, but is nonetheless easy to use and functional.
0532 436300

ARCHIMEDES WPS

The Archimedes is capable of using BBC word processors, via its BBC emulation mode. To confuse matters even more, there are different versions of Interword, View 3 and Wordwise Plus, which work on the Archimedes under BBC emulation. The ROM versions of the BBC word processors will work on the Archimedes via a 'podule' which can be attached to an archie. An alternative route is to use a PC word processor under PC Emulation. A memory resident program might be the elegant solution.

● FIRST WORD PLUS

£79.95

Acomsoft

Ported from the ST, this program does everything that the ST version does and more beside. Printers are well supported, the spelling checker is quick and functional and there is a facility to import graphics
0223 245200

QL WORD PROCESSORS**● TEXT 87**

£45

Software 87

Although the basic Quill comes bundled with the QL, this is a better option for the penning of serious work. It is quick, supports various fonts and can work in columns. The most powerful package for the QL

ATARI 8 BIT WPS**● ATARIWRITER**

£37.95

Mail Order Only.

This one is difficult to find, but years of trudging round looking are worth it. It has two column printing, two document editing, and a spelling checker.

● PAPERCLIP

£50

Mail Order Only

Again, you'll have to look for it, but it's still available mail order. Two document, two column mode, spelling checker and macros all supported.



ULTIMATE BUSINESS MACHINES



IF YOU THINK YOU'VE TRIED THE BEST..TRY THE ULTIMATE
OPEN MON-FRI 9 TILL 6 SATURDAY 9 TILL 1

AMSTRAD	OLIVETTI	COMMODORE	HYUNDAI	AKHTER
MODEL MON COL EGA PCW8256 318 PCW8512 399 PCW8512 424 PC1512SD 364 438 PC1512DD 438 514 PC1512HD 558 638 PC1840SD 558 628 PC1840DD 518 597 682 PC1840HD 688 778 858 SOFT-INC MON COL 12" 14" PC2086SD 538 618 699 786 PC2086DD 588 678 768 849 PC2086HD 765 851 936 1021 On-Site-Warranty £30 for above Below Inc Maintenance PC1288SD 750 835 920 1005 PC2288DD 851 936 1021 1106 PC2288HD 1021 1106 1191 1278 PC1388SD 180 1265 1351 1436 PC2388HD 702 1787 1872 1957	The new Olivetti PCS Range offers unbeatable performance at an incredibly low price. We feel that the PCS range offers you the customer a better deal than is presently on offer from any other manufacturer. 8086 compatible running at 10Mhz, 640K ram expandable to 2.5Mb on motherboard 3 full size slots and on-site-warranty makes this the deal of the 90's MODEL MON COL PCS86SD 562 719 PCS86DD 630 803 PCS86HD 803 876 PCS286DD 889 1062 PCS286HD20 990 1149 PCS286HD40 1062 1235 All PCS have VGA Monitors	NEW STARTER PACK RANGE MODEL MON COL PC10SD 485 625 845 725 PC10DD 535 685 885 775 PC20HD 885 795 855 945 AT80286 12MHZ EGA PC30HD20 965 1155 PC40HD40 1240 1399 AT80386 16MHZ 1MB RAM PC50HD40 1729 1892 PC50HD100 2025 2215 AT80386 25MHZ 2MB RAM PC60HD80 3380 3541 PC60HD200 4082 4243 All Commodores come with 12 Months on site warranty 3.5" 720K Drives-PC10/20 64 5.25" 1.2Mb Drive-PC30 64	MODEL MON COL EGA VGA SUPER18-TE 840K 10MHZ XT-S/D 399 549 699 759 XT-D/D 489 609 759 819 XT-HD20 569 749 899 959 XT-HD30 619 769 919 979 SUPER 286X 1MB 12MHZ AT286X-SD 775 849 899 AT286X-HD 799 975 1049 1099 SUPER 386S 1MB 16MHZ VGA AT386SX 995 1129 SD16Mhz AT386C 1241 1410 SD20Mhz PORTABLE LT3 AT 1MB RAM 20MB 1399 SHARP PORTABLES 4802 DUAL DISK XT 629 4841 40MB XT 1419 5541 40MB AT VGA 2269	MODEL MON COL VGM VGC PC/XT 479 625 S/D MINI-PC 538 684 D/D MINI-PC 740 899 H/D AT286-12SD 928 1099 AT286-12HD40 1207 1385 AT286-16SD 1020 1198 AT286-16HD40 1299 1479 AT386-16SD 1085 1263 AT386-16HD40 1388 1545 AT386-20SD 1320 1498 AT386-20HD40 1599 1779 AT386-25SD 1695 1873 AT386-25HD40 1975 2154 AT386-25HD100 * 2538 2716 AT386-25HD200 * 2895 3091 AT386-25HD300 * 3382 3560 ** = Floor Standing All above include On-Site-Maint

STAR	PANASONIC	CITIZEN	H P	EPSON
MODEL SPEED PRICE 9 PIN DOT MATRIX LC10 144/38 122 LC10-II 180/50 148 LC10-Colour 144/38 159 LC15 180/45 249 FR10 300/76 * 282 FR15 300/76 * 376 24 PIN DOT MATRIX LC24-10 200/87 194 LC24-15 200/87 318 XB24-10 240/80 * 368 XB24-15 240/80 * 494 LASER 8 8PPM * 1179 LASER 8 D 8PPM * 1599 STARSCRIPT 8PPM * 1797 RIBBONS MONO COLOUR LC10 3.50 5.50 LC24-10/15 4.50 FR/XB10/15 6.00 12.00 SHEETFEEDERS CALL	MODEL SPEED PRICE 9 PIN DOT MATRIX KXP1081 144/28 119 KXP1180 192/36 139 24 PIN DOT MATRIX KXP1124 192/63 219 KXP1624 288/65 362 KXP1895 362 KXP1654 CALL LASER PRINTERS KXP4450 11PPM * 1239 ACCESSORIES RIBBONS S/FEEED KXP1081 5.80 KXP1180 5.80 70 KXP1592 5.80 161 KXP1595 5.80 161 KXP1124 5.80 KXP1540 6.90 181	MODEL SPEED PRICE 9 PIN DOT MATRIX 120D PAR 120/25 107 120D SER 120/25 124 180E PAR 173/30 128 180E SER 173/30 154 PRODOT 9 300/45 267 PRODOT 9X 300/45 CALL PRODOT 24 240/60 CALL SWIFT 24 PIN 180/60 239 BARGAINS MT81 120/25 104 ACL135 135/27 119 HY910 10" 216/37 135 HY920 15" 216/37 199	MODEL PRICE THINKJET * 254 QUITEJET * 344 QUITEJET + * 406 DESKJET * 419 DESKJET + * 509 PAINTJET * 644 RUGGED WRITER * 875 HP LASERS LASERJET IIP * 808 LASERJET II * 1199 LASERJET IID * 1857 JUST RELEASED LASERJET SERIES III CALL	MODEL SPEED PRICE LX400 180/30 130 LX850 240/48 199 FX850 284/54 329 FX1050 240/48 393 EX800 300/60 459 EX1000 300/60 599 DFX5000 533/400 1139 LQ400 180/60 209 LQ550 180/60 279 LQ850 264/88 445 LQ860 290/88 499 LQ1050 264/88 589 LQ1080 290/88 639 LQ2550 400/133 899 TLQ4800 250/83 1499 SQ850 600/198 499 SQ2550 600/198 883 GO5000 LASER * 859

PRINTERS * INCLUDE ON-SITE-MAINTENANCE

A1 PLOTTER	A3 PLOTTER	CANON	DISK DRIVES	MONITORS
HITACHI 874-DB Floor standing A4/A1 4 pen plotter, HP7580B compatible 128K buffered RS232 interface re-plot facility, Auto pen capping Zoom-up/down facility 400mm/sec 0.025 resolution 61 built-in character sets LCD menu driven display 12 Months on-site-replacement optional 1MB buffer upgrade £2999	HITACHI 881-XA Desk top A4/A3 4 pen plotter HP7475A compatible 400mm/sec speed RS232/Parallel interface 19 Built in character sets 8K buffer 0.025" resolution Soft pen landing (Quiet) Weight = 8.5Kg £599	MODEL PRICE LASERS LBP4 4PPM * 849 LBP8-III 8PPM * 1347 LBP8-III 8PPM * 1739 LBP8-III 8PPM * 1849 SCANNERS IX-12 ROLLERBED 374 IX-12F FLATBED 665 IX-31F INTERFACE 99 OCR SOFTWARE 304 BUBBLEJETS BJ-130 519	3.5" 720K INTERNAL 59 3.5" 1.44MB INTERNAL 89 5.25" 360K INTERNAL 39 5.25" 1.2MB INTERNAL 59 3.5" 720K EXTERNAL 135 5.25" 360K EXTERNAL 69 5.25" 1.2MB EXTERNAL 95 40MB TAPE STREAMER 249 32MB HARDCARD 40MS 199 AMIGA 2ND DRIVE 3.5" 65 ATARI 2ND DRIVE 3.5" 73 AMIGA/ATARI 42MB H/D 399	MONOCROME PHILIPS 7513 12" GRN 71 MITSUBUSHI 12" GRN 65 COGA PHILIPS 8833 14" 199 EGA ECM 5400 14" 249 VGA MONO SAMSUNG 2611 89 VGA COLOUR ECM 5413 14" 259 MULTI-SYNC MTS 9600 14" 309

W/P	DATABASE	SPREADSHEET	DTP/GRAPHS	UTILITIES
GEM 1ST WORD + V2 134 LOTUS MANUSCRIPT 269 MULTIMATE ADVANTAGE II 259 PROF WRITE V2.1 169 SMART WP inc Spellcheck 150 SMARTWARE II WP 150 BORLAND SPRINT 120 TURBO LIGHTNING 39 SUPERWRITER 117 WORD V5 259 WORDCRAFT V6 261 WORDPERFECT V5.1 285 WORDSTAR PROF V5.5 189 WORDSTAR 2000 + B3 245	ASPECT 377 CARDBOX PLUS V4 236 PERSONAL CARDBOX + 93 CLIPPER 305 DATAEASE V4 417 DATAFLEX DEV 399 DATAFLEX R/T 155 DATA PERFECT 280 dBASE IV 320 dBASE IV DEV 499 dBASE V1.3 179 DELTA 5 365 FOXBASE PLUS V2.1 257 FOXPRO V1 387 PARADOX 3 357 PARADOX 2 270 RETRIEVE III 99 RETRIEVE IV 209 SMART DATA MANAGER 270 SMARTWARE II DATA MAN 270 SUPER dB 170	EXCEL V2.1 257 HAL 90 INWORD 46 LOTUS 1-2-3 REL 3 325 MULTIPLAN V4 98 PC PLANNER 129 PFS PROF PLAN 126 PLAN PERFECT V5 188 QUATTRO V1 90 SIDEWAYS 35 SILVERADO FOR 123 125 SMART SPREADSHEET 195 SMARTWARE II SPREAD 225 SUPERCAL C 5 238 COMMS SAGE CHIT-CHAT 69 CROSSTALK XVI 69 DATATALK 80 MIRROR III (UK) 130 MODEMS AMSTRAD MC2400 INT 139 AKHTER 2400 AUTO INT 129	TIMWORKS 73 BYLINE 126 db PUBLISHER 275 FINESSE V2 97 GEM ARTLINE 334 GEM DTP V2 233 GEM SCAN V1.1 67 PAGE ABILITY 115 ALDUS PAGEMAKER 3 450 VENTURA 2 520 WORDCRAFT ELITE V4 519 OFFICE PUBLISHER 327 382 V2 780 CHART 3 163 CHART MASTER 127 CONCORDE V3 420 DRAW APPLAUSE 310 FREELANCE PLUS V3 265 GEM DRAW PLUS V2.01 134 GEM PRESENTATION V3.1 267 GRAPH WRITER 265 HARVARD GRAPHICS V2.1 217 SIGN MASTER 95	AGENDA 220 CLAM 105 EUREKA 78 FASTBACK PLUS 95 IZE 195 MACE UTILS 53 MAGELLAN 69 NETWORKER PLUS 155 MENUGEN 40 METRO 55 NORTON UTILITIES 45 NORTON ADVANCED 87 NORTON COMMANDER 69 NORTON EDITOR 35 OFFICE WORKS 185 OVERDRIVE 41 PC TOOLS DELUXE V5.5 84 REFEREE 37 SIDEKICK PLUS 78 SIDEKICK 36 SUPERKEY 36 ULTRALOCK 128 XTREE V2 32 XTREE PRO 60

LANGUAGES	INTEGRATED	SCOOP PURCHASE
BASIC COMPILER V6 146 C COMPILER V5.1 202 COBOL COMPILER V3 358 FORTRAN COMPILER V5 202 MACRO ASSEMBLER V5.1 75 PASCAL COMPILER V4 137 QUICK BASIC V4.5 49 QUICK PASCAL 49 SORT V1.01 98 TURBO ASSEM-DEBUG 78 TURBO BASIC 36 TURBO BASIC DB TOOLS 36 TURBO BASIC ED-TOOLS 36 TURBO C PROF V2 120 TURBO C V2 60 TURBO PASCAL V5.5 60 TURBO PASCAL PROF V5.5 120 TURBO PASCAL DEV LIB 138 TURBO PASCAL DB T/BOX 36 TURBO PASCAL ED T/BOX 36 TURBO PASCAL GAMES 36 TURBO PASCAL GR/TBOX 36 TURBO PROLOG 60 TURBO PROLOG T/BOX 36	ABILITY 59 ABILITY PLUS 115 FIRST FRAMEWORK 56 FRAMEWORK III 325 LOGISTIX 115 OPEN ACCESS II PLUS 357 PFS FIRST CHOICE 78 SMART SYSTEM V3.1 350 SMARTWARE II SYSTEM 348 SYMPHONY V2 370 WORKS V1 84 ACCOUNTING NEW SAGE STERLING RANGE BOOKKEEPER 64 PAYROLL 2 129 JOB COSTING 129 ACCOUNTANT 162 ACCOUNTANT PLUS 259 FINANCIAL CONTROLLER 324 SPECIFY 3.5"/5.25"	COMPUTER, PRINTER & SOFTWARE BUNDLE £299 + VAT SANYO MBC 550 COMPUTER, MSDOS 2.11, 12" AMBER MONITOR, 135CPS DOT MATRIX PRINTER WORDSTAR WORD PROCESSING AND CALCSTAR SPREADSHEET-HURRY WHILE STOCKS LAST ULTIMATE BUSINESS MACHINES LTD 23 ALBION ROAD EARBY COLNE LANCASHIRE BB9 6PZ (0282) 844044 VISA & ACCESS FAX (0282) 843840 DELIVERY CHARGES UK MAINLAND NEXT DAY 4-DAY HARDWARE £15 £10 + VAT SOFTWARE £10 £8 + VAT CONSUMABLES £5 £3 + VAT TERMS All prices exclude VAT & Delivery charges. Strict Cash with Order. Visa/Access welcome. Cheques made out to Ultimate Business Machines Ltd. Official orders from Government, PLC's & Educational bodies accepted. Callers welcome but by appointment only

SHOPPING EXPRESS READER ADS

There are great bargains to be had in our reader ads section, but remember to check before you buy - we cannot be held responsible for the quality of the goods on offer!

● PERSONAL

PORTAL. Will the person who asked for and paid for "PORTAL" for his Amiga 500 please contact me on (0224) 824904. Your cheque cleared 4 weeks ago but you forgot to enclose your address. Just quote to me the price you paid and your surname to confirm that I am dealing with the right person.

ATARI STFM - Help wanted. I've had my machine for 1 week and need cheap, used software - games or serious. Contact John K on: 051 298 1815 9am-5pm.

VORTEX System 2000 installation disk for Amiga required. Mine won't load or run the partition program. Can anyone help? Phone 0634 371103 evenings.

WANTED Patch/Fix for Amstrad version of Reflex. Misunderstanding on purchase. Please make it run on my XT. Phone 0602 461303.

DISK based Amiga magazine. Send your pics, progs, tunes etc... Commission paid if used. Disks returned. Contact CEDM, 76 Hillhouse Avenue, Bathgate, West Lothian, EH48 4BB.

WANTED Atari ST contacts with view to forming local user group. Into Midi 2 graphics, also playing with fractals. Write:

Steve, 398 Halifax Road, Grenoside, Sheffield.

TECHNO Wizard need STOS routines and artwork for Mega Demo. Money offered. Send Samples to: 3 Pear Tree Dell, Lordship Estate, Letchworth, Herts, SG6 2SW.

DESPERATELY Seeking Denise, Paula and Agnus, but can't quite speak their language, can you help? Hi to Deadman and Agent Orange. Andrew Hardy 0243 785090.

NEW Atari STE owner wants help in aspects of computing. All serious letters answered Sean Lavelle, 9 Highbank, Gorton, Manchester.

I would like to get in touch with Matthew Aubury, author of TCOS for the ST. Andrei Ellman, Willem Pijperstraat 63, 1077XL, Amsterdam Holland.

URGENT need to get in touch with the Medway Boys. Write Mark, 85 Woolfall Crescent, Huyton, Liverpool L36 2NF.

● USER GROUPS

DO you own an 8-bit computer, yes? Send sae for details of new user group and newsletter. To Lee Barnes, 39 Toft Avenue, Grays, Essex.

DISK based Amiga magazine. Send your pics, progs, tunes, etc... Commission paid if used. Disks returned. Contact CEDM, 76 Hillhouse Avenue, Bathgate, West Lothian, EH48 4BB.

WANTED Amiga coders to join elite, artists, musicians and coders produce demos, music disks etc. Send letters Ray, 357 Wilton Road, Aston, Birmingham B6 6NS.

GLOS Amiga User Group, newsletters, help etc. Many advantages. phone John 0242 673515 or BBS 0453 511112.

JOIN the all new Amiga only user group. Glos Amiga user group for newsletters advice etc. Phone Tony on 0684 297214 for further details.

AMIGA classifieds, starting soon! Send name, address and details. categories are hot swaps, pen pals, for sale, wanted etc: 26 Kenilworth Close, Tipton, W Midlands DY4 8EQ.

NEW Amiga disk Fanzine, reviews, tips, demos. It's gonna be mega! SAE for details to Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk PE32 2QQ.

FASTLINE a new Sam Coupe user group and PD library for the users of 3.5 inch drives. Please send SAE or a disc and SAE for catalogue. Fastline, 1 Ryelands Place, Kilgetty, Dyfed, Wales SA68 0UX.

WOKING computer group meets every Saturday at 6pm. St Mary of Bethany Church, Mount Hermon Road. Please contact David 0483 763223.

ANYONE know of a user club for the Onic? Or where I can get one repaired? Steve - 53 Royle St, Northwich, Cheshire.

ATARI portfolio any user groups out there? Is so, please write to Nick Cheesman, 24 Cargate Avenue, Aldershot, Hants GU11 3EW.

STOS contacts wanted to form a PD development team, welcome, no SAE needed, send details to, 10 Oak Drive, Portishead, Bristol, Avon BS20 8QS.

SEGA MODE, Bi-monthly and dedicated to the Sega. Subscribe only £4 for 6 issues and 1 free. Payable to Andrew Hudson, 6 Albermarle Road, St Ives, Cambs PE17 6UN.

STE owners club. Free PD. Demos that work! Compatible software, Helplines, Contacts. Send Blank disc and stamp to 5 Alpine Drive, Hednesford, Cannour, Staffs WS12 5NL.

JOIN Mega drive users club today for further details send SAE. To M.U.C Naumai Colley Park, Braintree, Devon EX33 2AR. Phone Tony on 0271 46155.

TURBO MGT interviews. PD library, games and serious users. 24 pages. Send SAE to Turbo Mag, D Belts, Unit 1, 8 Healey, Tamworth, Staffs.

AMIGA owners interested in starting a M/C programmers group. Absolute beginners to seasoned pro's. Contact Mark, 1 Cromwell Road, Polygon, Southampton, Hants 100% reply guaranteed.

ANYONE interested in setting up an Amiga Users Group in the Lincoln area? Then contact Craig Thornton, 10 Dalderby Crescent, Nettleham, Lincoln LN2 2QB now!

STANDARD Sanyo MBC 55X user group, monthly newdisk and compatible software. Send SAE for details. 15 Ulsterville Park, Portadown, Co Armagh, N Ireland.

LAUNCH into the nineties, a new decade of BARGAINS!!

OFFER 1:

Double Sided 3 1/2" Disks, Individually Wrapped, 880k 135 tpi, ideal for Amiga, ST, etc., Blue, Ptn No., made in Japan, 100% Error Free, 2 for 1 Warranty or money back.

10 x 3.5"	£4.90
25 x 3.5"	£11.95
50 x 3.5"	£23.50
100 x 3.5"	£45.95
250 x 3.5"	£109.95
500 x 3.5"	£209.95
1,000 x 3.5"	£395.00

Sony 3.5" D/S Branded Diskettes £9.50 per box

OFFER 4: High Density Disks.

when only the Very Best will do.
5.25" HD 1.6mb for IBM, AT, Etc.

3.5" D/SHD 2mb, made in Japan, HD in corner of Disk.

10 x 5.25" HD	£4.60	10 x 3.5" HD	£11.00
25 x 5.25" HD	£11.00	25 x 3.5" HD	£27.25
50 x 5.25" HD	£21.50	50 x 3.5" HD	£54.00
100 x 5.25" HD	£42.00	100 x 3.5" HD	£106.00
250 x 5.25" HD	£100.00	250 x 3.5" HD	£257.50

Including Labels, Envelopes & w.p.'s
100% Error Free. 2 for 1 Warranty

OFFER 2:

Genuine Sony 3.5" Disks Double Sided, made in Japan, sold in Sony outlets, probably the best disk in the World!

10 x 3.5"	£5.90
25 x 3.5"	£14.35
50 x 3.5"	£27.59
100 x 3.5"	£53.95
250 x 3.5"	£133.95
500 x 3.5"	£256.95
1,000 x 3.5"	£483.50

DISKS FROM 39p

OFFER 5: 'Keep your data safe'

Top Quality Anti Static Lockable Disk Boxes, complete with 2 keys, Small or Large Capacity, ideal for Home or Office use!

3.5" x 40 Capacity	£3.95
3.5" x 80 Capacity	£4.95
3.5" x 100 Capacity	£5.95
5.25" x 70 Capacity	£3.95
5.25" x 100 Capacity	£4.95

OFFER 3:

5.25" Double Sided 48/96 tpi for IBM PC and Clones, etc, 100% Error Free, 2 for 1 warranty or money back.

25 x 5.25"	£6.95
50 x 5.25"	£12.95
100 x 5.25"	£24.95
250 x 5.25"	£59.95
500 x 5.25"	£110.00
1,000 x 5.25"	£200.00

Complete with labels, envelopes & w.p.'s

BRANDED DISK FILES £17.95 PER BOX

OFFER 6: Accessories;

Sourced from the world's leading manufacturers. Quality and Price Guaranteed. Buy with Confidence

Amiga/ST disk covers	£1.95
Universal Screen Filter	£14.95
3.5" or 5.25" Cleaning Kit	£1.95
Mousemat	£1.95
200 Labels	£2.99
Roll of 1,000 Labels	£7.50
PC or Amiga Cable	£5.95
Mouse House/Bracket	£2.95
Printer Stand with Tray	£13.99
Printer Stand	£11.95

Four good reasons for choosing Original Media as your Supplier:

- 1 No Minimum Order
- 2 Access and Visa accepted
- 3 Next Day Delivery
- 4 Free Helpful Advice



Post add £2.95 per order

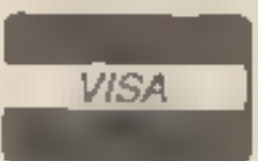
CORPORATE
EDUCATION &
TRADE ENQUIRIES
WELCOME

THE ORIGINAL
MEDIA
COMPANY LTD
(8 LINES)

Fax: 0530 813595
Dept NCI
14 ASHBY RD
COALVILLE
LEICESTER
LE6 2JA

NEW

ADVANTAGE PACKS



- THE BEST PD & SHAREWARE SOFTWARE AVAILABLE
- EACH PACK CONTAINS THREE DISCS
- ALL PROGRAMS TRIED & TESTED
- FAST DESPATCH - FIRST CLASS

JUST
£9.95
EACH

INCLUDING VAT
AND POSTAGE

FOUR WAYS TO BUY:

- 1 PHONE 0242 224 340 with your Access or Visa number.
- 2 FAX 0242 226 755
- 3 POST your cheque or P.O. or Eurocheque
- 4 COLLECT Direct From our showrooms

56 BATH ROAD,
CHELTENHAM, GL53 7HJ

ATARI PACKS

- ST CLASSICS Breakanoid, PacMan, Space Invaders, Daleks, Stone Deluxe, Fruity, DGDB and Colossal Cave.
- ARCADE ACTION Orions Run, Floyd The Droid, Durrer (Arkanoid style) Fuzz Ball and Bounce-Out.
- SPACE BATTLES Star Trek (of course!), Azarian, Firestorm, Space Wars, Megaroids, Lunar Lander, Space Battle.
- ST CHALLENGER Chess, Othello, Draughts, Backgammon, Cribbage, Give Us A Break.
- JUNIOR CHALLENGER Laserchess, Pyramino, Solitaire, Tunnel Vision, Master Mind, Box the Dragon, Cube Maze, Score 42, Towers of Hanoi.
- PRE-SCHOOL FUNPACK Barnyard, Mister Potato Head, Sensoria, Monkeys and Balloons, ABC, KidStory, KidSketch, KidGrid, KidPiano.
- LA ST VEGAS Fruit Machine, Blackjack, Poker, Pontoon, Yahtzee, Cribbage, Slots, Roulette, Pick Pocket.
- FAMILY ENTERTAINMENT Monopoly, Trivia Quiz, Wheel of Fortune, Connect, Reversi, Yahtzee, Connect, Tennis, Night Crawlers, Pente, HiLo, Bog, WizQuiz, Fantasia.
- ST ADVENTURES PACK System 5, Once A King, Darkness Is Forever.
- EDUCATION AND FUN Junior Publisher, Graphics, Music, Numbers, Go-Round (Maths), Number Maze, Geography.
- HISTORY PACK Superb program which makes history entertaining.
- ST-ARTIST featuring the most popular Art/Drawing programs.
- THE DOODLER Drawing, Animation, Fractals, Doodle, 3D Designer, Sprite Designer, Window Pics, Landscapes.
- UTILITIES TOOLBOX The definitive collection of essential utilities.
- HACKER'S TOOLBOX Sector Editors, Archiver, Virus Killer etc.
- LEARNING C Comprehensive Tutorial with plenty of examples.
- OUR FAVOURITE WORD PROCESSOR The latest ST WP with Spell Checker, Font Editor, Mail Merge and Address Book programs.
- OUR FAVOURITE DATABASE Powerful but easy to use program plus Data Handler, Memo-res Database, Label Printer.
- OUR FAVOURITE SPREADSHEET The definitive spreadsheet, Opus 200, with graphing function, ST-Sheet, Mem-res Calculator etc.
- DESKTOP PACK Brim-full of Desk Utilities including WP, Calc, Alarm, Appointments, Ramdisc, Digital Clock.
- KERMIT & FRIENDS The latest communications programs incl. Kermit.
- CLIP ART PACK #1 Over 100 ready-to-use clip art pictures.
- CLIP ART PACK #2 Nearly 100 more top quality pictures.
- THE DEMO PACK #1 The latest top quality demonstration programs.
- THE DEMO PACK #2 Favourite demo programs including ST Tour.
- THE MUSIC PACK Music sequencer, Composer, Digital Drumkit and tunes.
- PICTURE SHOW Cartoon Fun, Animals, At The Movies and lots more.

PLEASE STATE DISC
SIZE WHEN ORDERING
PC PACKS

AMIGA PACKS

- AMIGA CLASSICS Space Invaders, PacMan, 3D-Breakout, Bally II, Wanderer, Egyptian Run, Slotcars, Tunnel Vision, Light Cycles, Conquest.
- ARCADE ACTION Asteroids, Trek73, Gravity Wars, Cosmic, Cosmaroids, Missile Command.
- AMIGA CHALLENGER Chess, Solitaire, Backgammon, Empire, OXO, Multi-Level Tic-Tac-Toe, Picture Puzzle, Othello, Klondike, Tetrix, Monopoly, Shanghai, Five In A Line, NutHouse.
- AMIGA ADVENTURES featuring Hack, Larn Dungeons & Dragons, Moira.
- FUN WITH GRAPHICS featuring Animation, Mandelbrot Pictures, Fractal Landscapes, Graphics, Raytracer, Sliding Puzzle, Life 3D.
- STAR TREK Amazing new version of this cult classic. Needs two drives and 1 Meg memory. Playable demo with great graphics and sound.
- THE MUSIC PACK A large collection of sound effects, new instruments for the cz synths, MIDI utilities and songs.
- SOUNDTRACKER Make your Amiga more musical with this high quality program. Includes full instructions, songs and instruments.
- SONIX Three disc-fuils of tunes for the commercial Sonix program.
- KERMIT & FRIENDS A selection of communications programs including Kermit himself.
- UTILITIES TOOLBOX A host of useful utilities for the Amiga user.
- HACKERS TOOLBOX Sector Editors, Archivers, Virus Killers etc.
- LEARNING C-A complete C compiler plus loads of tools and source code.
- THE PROGRAMMERS PACK featuring Prolog, Forth, Modula-2, Lisp, Logo.
- SEEING STARS A collection of fascinating Astronomy programs.
- WORD PROCESSING The best Amiga WP plus Spelling Checker and Editor.
- IN BUSINESS featuring Database, Spreadsheet, Home Accounts, Hypertext Shell, Home Inventory, Calculator.
- THE DEMO PACK #1 The latest top quality demo programs.
- THE DEMO PACK #2 Popular demo classics.
- THE DEMO PACK #3 A selection of entertaining Music Demos.
- THE DEMO PACK #4 A further set of musical demos.
- PICTURE SHOW #1 High quality slide-show of hi-res pictures.
- PICTURE SHOW #2 More hi-res pictures to see for yourself.

PC PACKS

- PC CLASSICS Over 20 great games including Space Invaders, Pacman, Pacgirl, Ribit, Bricks, Donkey Kong, Q-Bert, Jumping Joe, Pango.
- ARCADE ACTION Nearly 20 action-packed games including Dr. Sleep, Striker, Paratrooper, Sopwith, Dragonfly, Killer Bees, Mario Bros.
- LAST VEGAS One Arm Bandit, Roulette, Backgammon, Biorhythm, Keno, Casino, Craps, 21, Poker, Pontoon, Quimbee.
- PC-CHALLENGER PC-Chess, Othello, Frigate, Big Rig, Stock Exchange, Air Traffic Control, Hexplode, Kalah, Battleships, Sales Game, Rogue.
- SPACE BATTLES Emergency Mission, Quantoid, Kamakaze, Rescue, Rockets, Spacewar, Galactic Conquest, Daleks, DepthCharge, Lazy Monday, Intercept, Berzerk, Saucer, Crisis, Encounter, Xo and Space.
- JUNIOR CHALLENGER 20 brain boggling games including 3D TicTacTo, Dotto, Draughts, Mastermind, Four-In-A-Row, Concentration, Blockade.
- SPORTS FANS PCTennis, Teed Off, Sailing, Armchair Quarterback, PC-Golf, PC-Pool, PC-Bowl, Basketball, American Football.
- PRE-SCHOOL FUN PACK Amanda's Letter Lotto, ABC Funkeys, Amy's First Primer, teaches letters, numbers and keyboard skills.
- FAMILY ENTERTAINMENT Board game classics - Monopoly, Scrabble, Risk.
- DRIVING SKILLS Hit the road with Ford Simulator II and Grand Prix.
- THE WIZARD GAMES COLLECTION Soccer Star, Pop Star and Insanity.
- PC-ADVENTURES featuring Colossal Cave, Dungeons & Dragons and Hack.
- EDUCATION & FUN Alphabet, Animals, Clockgame, Hangman and Mosaic.
- NUMBER PRIMER - learn basic numeracy. Word Primer - learn spelling.
- PC-ARTIST Drawing and Painting with PC-Draft II & PC Draft Clip Art.
- DESKTOP DRAWING AND PUBLISHING featuring PC-Key Draw.
- UTILITIES TOOLBOX Over 100 useful utilities for PC users.
- HACKERS TOOLBOX featuring file recovery, sector or file editor, unerase and many Norton-like programs.
- OUR FAVOURITE WORDPROCESSOR featuring Galaxy plus Thesaurus.
- OUR FAVOURITE SPREADSHEET featuring As-Easy-As, Pivot and Tutorial.
- OUR FAVOURITE DATABASE featuring the latest PC File+.
- PC-JOKE PACK Crammed full of harmless practical jokes for the unsuspecting PC user.
- KERMIT & FRIENDS The latest data communications programs - Procomm UK (for file transfer) and Easi-Link (for Viewdata and Prestel).
- THE MUSIC PACK featuring Pianoman, Composer & Voyetra MIDI sequencer.
- FAMILY TREES featuring you need to plot, analyse and print your own family history.
- CROSSWORD FANS featuring Crossword Creator, Crossword Solver, Anagram Creator, Anagram Solver.

ONE PACK£9.95
TWO PACKS£15.95
THREE PACKS.....£21.95
OVER 3 PACKS ..£7.50 EACH

SAVE MONEY!

JOIN OUR COMPUTER USER
GROUP AND GET PACKS FOR
JUST £6 EACH PLUS! -

- ★ Discounts on Hardware and Software
- ★ Use of our technical support services
- ★ monthly newsletters
- ★ All this for just £16.95 a year

DON'T FORGET TO BACK UP
YOUR DISCS

ADVANTAGE 5 1/4" DSDD -
.....100 for £29.95
ADVANTAGE 3 1/2" DSDD -
.....100 for £49.95

ADVANTAGE (NCE) 56 BATH ROAD,
CHELTENHAM, GL53 7HJ.
TEL: 0242 224340 FAX: 0242 226755

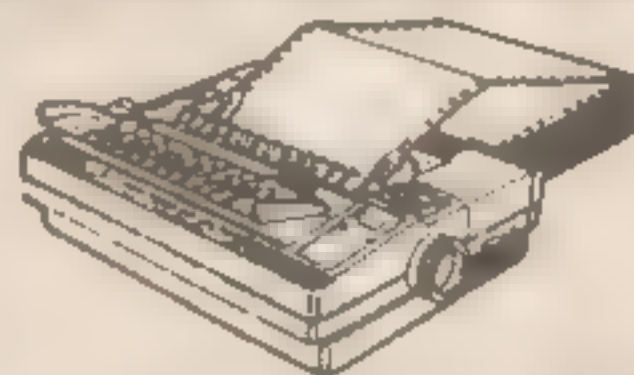
BLANK DISKS

All of our blank disks are guaranteed and supplied with labels. Our 3.5" Unbranded disks are either KAO or Sony. All Sony Branded disks are boxed and supplied with labels (all Sony 5.25" disks are supplied with write protect tabs). All disk prices include vat and delivery.



QUANTITY	10	20	30	50	100	200	250	300
UNBRANDED 3.5" DS/DD	6.50	11.99	16.99	27.50	52.99	96.99	115.00	134.99
SONY BRANDED 3.5" 2DD	11.50	21.50	30.50	50.00	95.00	188.00	230.00	275.00
UNBRANDED 3.5" HD	14.95	27.95	39.95	59.99	115.00	225.00	279.95	330.00
SONY BRANDED 3.5" HDD	27.50	53.00	77.00	120.00	235.00	460.00	570.00	680.00
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	27.50	52.50	65.00	77.50
SONY BRANDED 5.25" 2D	7.95	15.50	22.50	36.99	69.99	135.00	165.00	189.99
SONY BRANDED 5.25" HDD	12.99	24.99	34.99	56.99	99.99	195.00	235.00	275.00

CITIZEN Swift 24



- * 24 Pin Printer
- * 192 cps draft
- * 64 cps LQ
- * Epson LQ compatible
- * IBM compatible
- * Nec PG+ character set
- * 5 resident LQ fonts
- * 80 column

- * Tractor feed
- * Single sheet feed
- * Parallel interface
- * Supplied with lead
- * 7 Colour option available extra
- * Beats LC24/10 !!
- * RRP £447.35

SWIFT 24 ACCESSORIES

- Colour Upgrade Kit £ 34.95
- Black Ribbons (each) £ 3.95
- Colour Ribbons (each) £ 13.95

£310.00

INC VAT AND DELIVERY

Panasonic KXP1124

- * 80 col, 24 pin multi mode printer
- * 160 cps, 63 cps NLQ at 10cpi
- * 192 cps, 63 cps NLQ at 12cpi
- * Adjustable push/pull tractors
- * Front, rear and bottom feed
- * 10, 12, 15, 17, 20cpi + proportional
- * Front panel selection - no dips!
- * 2 draft, 5 NLQ fonts standard
- * Paper Parking
- * A4 Landscape and Portrait
- * Epson LQ and IBM Pro compatible

EXCELLENT
VALUE!

£255.00

Including VAT and courier delivery



MANNESMANN TALLY

- MT81 PRINTER**
- * 9 Pin Dot Matrix
 - * Parallel/Centronics interface
 - * 186 cps high speed
 - * 130 cps draft
 - * 26 cps NLQ
 - * Epson emulation
 - * IBM Printer emulation
 - * Tractor feed
 - * Single sheet feed

- * Paper Parking
- * Free ribbon
- * Includes cable
- * Ribbons only £3.95 each

£144.95

INC VAT AND DELIVERY

Star

- Genuine Star LC10 Ribbons...
- 1 x Black Ribbon £3.50
 - 5 x Black Ribbons £16.95
 - 10 x Black Ribbons £32.95
 - 1 x Colour Ribbon £8.20
 - 5 x Colour Ribbons £24.95
 - 10 x Colour Ribbons £47.95

Star LC10 Mono £ 169.00
Star LC10 Colour £ 219.95

All poster prices exclude cable, vat and delivery

PC MOUSE

The GENIUS GM-6X PC MOUSE :

- * 3 Button
- * Serial type
- * 9 pin & 25 pin connectors
- * Dr Halo III graphics software
- * Mouse Driver Software
- * Users Manual

100% Microsoft
Compatible
For use with IBM PC
XT or AT compatibles

only **£26.00** inc vat

ST MIDI

LATEST and ORIGINAL versions !!

C-Lab Creator SL V2.2

C-Lab Notator SL V2.2

C-Lab Unitor

C-Lab Export

Steinberg Pro 24 V3

Steinberg Pro 12 V1.1

Steinberg Cubase V1.5

Steinberg Soundworks

Steinberg Synthworks

Steinberg Avalon

Digital Muse Virtuoso

Digital Muse Prodigy

Dr.T Tiger Cub

FM Melody Maker

other packages available.

Phone now for the
Best Price !!
(If we print 'em you
won't believe 'em !!)

THE ATARI PORTFOLIO

A full-featured personal computer in the palm of your hand.

- * MS-DOS Compatible
- * LOTUS 1-2-3 spreadsheet
- * Full text editor
- * Address book/tone dialing
- * Appointments diary
- * 128K Ram

PC CARD
DRIVE
IN STOCK !

Atari Portfolio Pocket PC	£229.95
Smart Parallel Interface	£38.00
Smart Parallel Interface - with parallel cable	£39.95
32K Memory Card	£46.75
64K Memory Card	£82.95
128K Memory Card	£119.00
Finance Software Card	£47.50
PC Application Software	£47.50
Utilities Software Card	£47.50
Serial RS-232 Interface	£56.95
Super Memory Expander	£164.95
Portfolio Card Drive	£67.50
Mains Power Adaptor	£11.99

HAND HELD PC SCANNER

GENIUS GS-4500 SCANNER

WIDTH 105MM, 400 DPI, PACKAGE INCLUDES: GS-2000 SCANNER & CONTROLLER, GENIUS SCAN EDIT SOFTWARE, OCR SOFTWARE & DR HALO III. FOR USE WITH ALL PC XT/AT COMPATIBLES.

£ 175.00

INC VAT & DELIVERY

LEADS, PLUGS & CABLES

Parallel lead (ST, PC & Am)	£5.95
Pair of 2.5m Midi leads	£6.95
Joystick/Mouse extension cables (ST)	£4.75
Monitor Switch box (2 x ST monitors)	£14.95
15 pin din plug (ST monitor)	£1.95
14 pin din plug (ST disk drive)	£2.25
14 pin din socket (ST disk drive)	£2.95
ST replacement mouse lead	£3.75
Scart plug with plastic hood	£1.95

**BEST PRICES (0903) 700714
RING FOR LATEST DEALS**

NEW!

AMAZING PRICES ON ATARI ST !!

ATARI STE

520STE 512K RAM	£345.00
520STE 1MB RAM	£385.00
520STE 2MB RAM	£449.00
520STE 4MB RAM	£599.00

All STE computers come with 3 software titles:

First Basic, Music Maker and Organiser.

All STE computers are checked prior to despatch and all prices include VAT and 1 working day delivery by courier.

ATARI STFM POWER PACK

★ Atari 520STFM computer

★ 20 top selling games (Afterburner, R-Type, Gauntlet 2, Super Hang On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombuzal, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray)

★ Mouse, Joystick and instructions

ALL THIS FOR ONLY

£299.00

including vat and 72hr delivery

ATARI CX-40 JOYSTICK

Special offer, limited
stocks, only

£ 4.95

inclusive

STE RAM KITS

DIY 1 KIT - 520STE to 1MB (2 x 256K cards)	£50.00
DIY 2 KIT - 520/1040 to 2MB (2 x 1MB cards)	£149.95
DIY 4 KIT - 520/1040 to 4MB (4 x 1MB cards)	£324.95

All RAM prices include VAT and delivery.

HYPER PACK

Hyper Paint, Hyper
Draw and Borodino
only

£14.95

inclusive

ATARI LYNX

THE NEW COLOUR HAND HELD CONSOLE

ATARI LYNX GAMES MACHINE

(with California Games card FREE!)

only **£ 164.00** inc vat + delivery

Blue Lightning	£ 22.00 (RRP £29.99)
Chips Challenge	£ 22.00 (RRP £29.99)
Electrocop	£ 22.00 (RRP £29.99)
Gates of Zendocon	£ 22.00 (RRP £29.99)
Gauntlet III	£ 25.50 (RRP £34.99)
Rampage	£ 25.50 (RRP £34.99)

NEW
LOWER
PRICES!

★ ATARI ST PERIPHERALS ★

Atari SM124 Mono Monitor	£ 99.99
Atari Megafile 30 Hard Disk	£ 449.95
Atari Megafile 44 Removable HD	£ 849.99
Atari Megafile 60 Hard Disk	£ 619.95
Atari SLM804 Laser Printer	£ 1115.00
Philips 8833 Stereo Colour Monitor	£ 259.95
Cumana 1 MB External Drive	£ 89.95
ST Monitor Switch Box	£ 14.95
STE Stereo Scart Lead	£ 12.99
Robokit Interface	£ 89.00

ST GAMES ONLY £2.00 EACH

Afterburner, R-Type, Gauntlet 2, Super Hang-On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombuzal, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray.

All of the above games are available in the Power Pack Software pack for only

£39.99 (that's less than £2.00 each)

(requires double-sided disk drive)

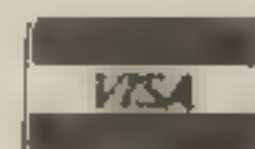
BEST PRICES

(DEPT NCE), UNIT A, GRAFTON PLACE,
WORTHING, WEST SUSSEX. BN11 1QX



(0903) 700714

YOU CAN PLACE YOUR ORDER 24 HOURS A DAY



All prices include VAT and delivery unless otherwise stated. Goods despatched same day whenever possible.

All prices are subject to change without notice. BEST PRICES only supply original equipment and not grey imports. All of our equipment is fully guaranteed. We stock all types of computer hardware and software - give us a call for our BEST PRICES.

Mail order only, callers and collections only by prior arrangement with us. Thank You.

ALL PRICES INCLUDE UK DELIVERY UNLESS STATED
ADD £6.00 INC VAT FOR NEXT WORKING DAY COURIER DELIVERY
ADD £10.00 INC VAT FOR SATURDAY COURIER DELIVERY

OWN a CBM 64 or Amiga? Want demos and fast contacts? Then join "Crystal Unicorn". Write: D ■ Masson, Ethrope Hotel, Gerrards Cross, Bucks SLY.

WANTED raw beginner needs PC user group in Paisley Greenock area or contacts. Phone 0475 706426 Port Glasgow.

COME on there must be an ST User Group in the Reading area. This is getting beyond a joke. Please telephone Matthew on 0734 788085.

C64 tape magazine starting up! Needs C-64 users. Contact RDJC, 23 Melmount Gdns, Strabane, Co Tyrone N Ireland BT29 9EB.

AMIGA contacts and user groups ■ west of Scotland needed. All letters and disks will be answered. P Evans, 70 Rowan Road, Abrohill, Cumberland, Glasgow G67 3BZ.

ANY Mamotech enthusiasts out there fancy making contact? Mine is used regularly, it's too good to disappear yet! Phone 0923 246318 MXT repair manual sought.

SWIFT Disc System for Spectrum. There must be at least 10 more users out there! Fancy owning up and communicating? 0923 246318.

SPECTRUM TR Beta disc system version 5.03. Anyone care to talk about swaps, hints, etc? (4.11 upwards) contacts sought 0923 246318.

AMIGA and ST contacts wanted to start user group. Please write to Mr Casey, 32 Harding Road, Stoke-on-Trent ST1 3BQ.

● GOODS WANTED

DISABLED Amiga 500 users need monitor (mono or colour). Please write to: Mr.

K Davies, 42 Buckshaft Road, Cinderford, Glos, GL14 2DU, with details.

WANTED BBC 'B' compatible monitor & leads. Price around £100. Contact John: 0535 609938 after 6.30pm.

WANTED "Computer projects for Railway Modellers" by Amos and Cock. £10. Francis, 8 Endowood Road, Sheffield, S7 2LZ.

WANTED Psion programs of any kind or anything to do with the Psion. Tel: Paul 0294 67086.

TORCH C40 wanted for spares. Phone (0784) 430005.

WANTED Spectra video SV-318 or SV-328 computers must be working and complete with manuals and PSU. Non workers considered. Tel: 0527 579620 (Midlands).

WANTED 1541 disk drive for Commodore ■ plus programme for tape to disk transfer. Tel: 0964 614741.

UTILITY programmes required. Psion 'Vu-File' and 'Vu-Calc' for Spectrum 48K. Contact: R. Latham, 33 Bodmin Avenue, Stafford, ST17 0EF.

MAGAZINE. Amiga Computing March/April '90 issues wanted. Swap for 2 PD disks of your choice. Contact HOA, 92 Latimer, Beaconsfield Road, London, SE17 2EW.

SCULPT 3D images wanted. Cash for high quality Ham raytraced images. Send images on disc to: Jez Sans, 32 Cliff Gdns, Minster, Sheppey, Kent, ME12 3QY.

WANTED chase HQ (disc) for Amstrad CPC. Will swap Batman the Movie (disc). Write to Chris, 6 Frank Street, Gt Horton, Bradford, BD7 3BT.

WANTED for Amiga 500, original games - Ultima 3 also Ultima 4. Tel: 061 223 5974 anytime.

WANTED fairly recent Amiga with or without upgrade or 2nd drive. Cash to hand. Tel: 0908 643306 (North Bucks).

WANTED: anything Desktop Publishing for enthusiastic newcomer eg. "Professional Page", "Pagestream" etc. Also hardware, eg. A590 hard drive, copy stand, digitiser, scanner etc. 0773 749630.

WANTED Amphenol 24 way plug and socket type 26-159-24 P and S. Phone (0283) 68088.

AMIGA 2nd drive wanted, will pay £35.00. Will pay £150 for A500. Write to Steven Hancock, Little Dellfield, Clapworthy Mill, South Molton, N.Devon, EX36 4HX.

MODEM required for my Amiga. Must ■ reasonable. Write: Lovell, 69 Shaftesbury Road, Milton, Weston Super Mare, Avon, BS23 2YB or phone: 0934 413502.

SPECTRUM +3 PD software wanted. 3" disk only. Please send brochure and prices. Also word processing and typing SAE. Lee Coupland, 32 Victoria Road, Keighley, W. Yorks, BD21 1HQ.

AMIGA hard drive wanted. Any considered. Ring (0392) 430246 or write to: Mr B Lad, 3 Waverley Avenue, Exeter, EX4 4NL.

HITCH-HIKERS guide to the Galaxy for Amiga. Any reasonable amount will be paid, including postage. Telephone Adam after 6.30pm at Matlock (0629) 582685.

MSX Zen assembler wanted cheap or swap for 'The Wreck' adventure. Also disk drive for Toshiba HX10. Please

phone Julian on 0202 22077 ext. 3197 9-5pm.

WANTED 5121 memory upgrade for Amiga, will pay up to £30. Must be in good nick. Jon: 0502 582448 after 6pm.

WANTED Mannesman Tally MT81 cut sheet feeder. Phone Louise after 6pm on 0285 713345.

WANTED: any hardware for the T199. Also software and command modules. Will consider swapping a set-up for Amstrad CPC464. Phone James on (0293) 784394.

WANTED Atari disk drive for Atari 130XE computer. Cheap as possible. Also any 8 Bit games. Write to: Neil Allen, Gale Mead, Bradford Road, Bingley, BD16 1LS.

AMIGA A500 5.25 drive wanted. Fair price paid. Phone Shane on 0603 507362 or write to Shane, 11 Cadge Road, Norwich, Norfolk, NR5 8AT.

MOUSE, lightpen wanted with art software for Amstrad CPC464 (tape). Also: memory expansion and cheap printers. Good prices paid. Tel: Simon on (0778) 344759.

WANTED, music printing software for IBM PC also wordperfect 5.0 manual. Write: J. Pearson, 224 Spruce Road, Glasgow, G67 3DU.

WANTED any MZ80A software even PD. Has anyone and MZ80A CPU board or complete smashed MZ80A. P:hone 0302 350175.

WANTED: working replacement keyboard for 18/48K Spectrum - £5 cash paid plus postage. Phone (0648) 42831 or (0232) 862987 ask for Adrian.

3 1/2"

DSDD DISKS

100% CERTIFIED
ERROR FREE

PRICE INCLUDES
VAT & LABELS

ALL OUR DISKS
ARE FULLY
GUARANTEED

40p

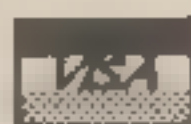
ALL OUR DISKS ARE OF THE HIGHEST QUALITY
AND ARE MANUFACTURED BY MITSUBISHI OR VERBATIM

QUALITY MOUSE MATS £2.50

PLEASE ADD £2.95 P+P PER ORDER
Cheques/PO's to:-

MEDIA DIRECT - DEPT NCE
11 SAGE CLOSE, HANLEY
S-O-T ST1 3SF

TELESALES HOTLINE:
0782 - 712819



DISK BOXES

3 1/2" 100 CAP	....	5.50
5 1/2" 100 CAP	....	5.50
3 1/2" 150 CAP	....	16.95

(STACKABLE)

IF PURCHASING WITH
DISKS DEDUCT £1.00

5 1/4" DSDD DISKS

25	.....	7.50
50	.....	14.75
75	.....	21.00
100	.....	26.50
500	.....	130.00
1000	.....	249.00

3 1/2" DSHD DISKS £1.00 each

ALL THE DISKS WE SELL ARE
HIGH QUALITY MEDIA BY WELL
KNOWN MANUFACTURERS AND
ARE FULLY GUARANTEED

TRADE, EDUCATION
AND GOVERNMENT
ORDERS WELCOME

SONY Bulk 3 1/2" DS/DD Disks

25	.....	13.75
50	.....	26.50
75	.....	38.65
100	.....	49.95
500	.....	240.00
1000	.....	465.00

5 1/4" DSHD DISKS

25	.....	15.50
50	.....	30.50
75	.....	44.50
100	.....	57.00
500	.....	275.00
1000	.....	530.00

COMPETITION PRO JOYSTICKS

IN YOUR FAVORITE TEAM COLOURS

WORLD CUP SERIES

ENGLAND	.....	12.95
BRAZIL	.....	12.95
ITALY	.....	12.95
SPAIN	.....	12.95
BELGIUM	.....	12.95
HOLLAND	.....	12.95
SWEDEN	.....	12.95
WEST GERMANY	.....	12.95
USA	.....	12.95
SCOTLAND	.....	12.95

AMIGA wanted with accessories and games if possible. Tel: 0473 49902.

INFORMATION for Psion Organiser Interface. Also unwanted datapak eraser or datapak / Rampak's required. Will pay postage. Richard Burt, 51 Gracemount Drive, Edinburgh, EH16 6EZ.

ANY bargain utility programs on cartridge for 128K QL out there? eg. Turbo: Lightning; Flashback; Eye-Q etc. Tel: Bill (0206) 861430.

SCULPT 4D or Sculpt 3DXL at a reasonable price. Contact Bob after 6.00pm on 021 472 1376.

WANTED any non working Atari ST/M/FM/E/Mega. Nothing refused, any condition accepted. Fair price paid as it's needed for spares. Tel: 0495 272092 (Mark).

ST Action back issues wanted, No's 12-21 and no 1 if possible. Will pay £1 each plus postage. Call Dave (0437) 766719.

10/12Mhz card wanted for 8088 based XT compatible. Anything considered. Telephone Portsmouth: (0705) 665435 after 6pm.

WANTED: 'Transformer' PC emulator for Amiga. Will swap or buy (must be cheap). Call Nigel on 0222 888665 Mon-Thurs after 7pm.

AMIGA users wanted to swap adventures. Must be originals. Write to: Nigel, Tardis, Abertridwr Road, Caerphilly, Mid Glam, CF8 2AP.

WANTED: Hyundai MS DOS v3.3 system disk. Cash waiting or swap PD. 25 Glen Eldon Road, Lytham St Annes, Lancs, FY8 2AX.

SWAP Yamaha PSS 680, interface, leads,

transformer for Amiga colour monitor. Also swap Star LC10 colour for best 24pin offered. Phone Rob, 0656 736986

£70 cash waiting for 3.5" Amiga drive. Must have a PSU not Amiga powered. Also Amiga Contax leave a message on 0925 35856. I'll ring back.

AMSTRAD PCW whole set wanted. Extra programmes a bonus. 0787 247991. Suffolk or East Anglia if possible.

PC engine games wanted. Will pay up to £15 per item. Send lists to S. Billing, 206 Ashgrove, Hounslow, Middx, TW5 9DT or ring 081 569 4132 after 6.30pm.

A500 wanted will pay up to £300. Will buy with extra drives/expansion/software. Andrew (0835) 23598 or write: Denovan, Main Street, St Boswells, Roxburghshire, Scotland, TD6 0AZ (evenings).

DO you have any unwanted Vic-20 software/memory expansion? Yes? Good! Contact me: Adam Wright, 33 Great Holme Court, Thorplands, Northampton, NN3 1YD. Prices negotiable.

ANY software for old CBM 4032 system business, games etc. Tel: 041 649 5569 daytime.

WANTED Atari SM124 or SM125 high res monitor. Norfolk/Cambs area preferred. Must be in good working order. Call 0553 85497 anytime.

CASH for your non working Atari ST 520 1040. Will collect (in north west area) Tel: 061 368 5952 anytime.

HELP can anyone sell me an original copy of Nato Commander for CBM 64 (tape only). Will pay cash. Ring J. Horrocks, 0942 873159.

● FOR SALE

PART exchange my IBM portable 512K twin 3.5 drive. Value £450 for 2086 twin drive colour system or similar HRCD. Cash adjustment. Details (0268) 685366.

HOSTAGES £15 Boulderdash and Boulderdash II £10 each all for IBM PC and compatibles. Phone (04353) 3340 and ask for Michael.

SMART cable, universal RS232 interface, Logic Module and cable, automatically configures to different pinouts £25. 071 607 8325.

AMIGA 500 1/2 meg upgrade Philips CM8833 monitor and software, worth £1200, £450 ring Paul on 081 958 7801 after 6.30pm.

MSX games for sale one to four pounds. Phone Nigel 021 772 5159.

ACORN colour monitor for Archimedes £160. Also suitable for BBC etc. 071 607 8325.

BBC B viglen console, mono monitor, DSDD 80 track drive £175 with 256K board and Wordwise+ £225 071 607 8325.

AMSTRAD 464/6128 disk software. Serious and games, books, mags, £95 or make me an offer. Tel (0908) 220486 includes Devpac 80, 'C' Image System, Interdictor Pilot.

VIRUS killer for ST, brand new, unopened wrapping, £10 or will swap for good ST games. Tel (0908) 220486 ask for Gary between 8pm-10pm.

PC Engine (PAL), joypad, XE-1PC joystick, Dragon Spirit, Galaga 88, Sonson II, Drunken Master Games, worth £350. Sell for

£160. All boxed. Phone 081 571 5809.

SPECTRUM 48K Saga keyboard, AMX mouse, printer interface, HRS printer, 3 interfaces, some software and books and extras. £140 ono (will split!) Phone Pete on 071 278 6149 after 4pm.

A500 with A590 + 3 meg ram also some software, bargain £500 may swap with frustrated n-cube owner or eccentric Cosworth owner no sheep, call Winsford (0296) 594717.

ATARI 520S STFM 1 meg drive £400 worth of games including Populous, Police Quest II, Exterminator, Blood Money and more. Call 081 566 7251 price £250.

FALCON F16 unused, boxed complete. For Amiga duplicate gift, £14.00 inc P&P. Phone (0934) 413501.

SPECTRUM +2 over 100 games, inc Cabal, Batman, Gauntlet II, joystick, manual, leads. Bargain £100! Tel (0403) 732663 buyer collects.

MEGA 1 virtually unused (detest WIMP!) monitor new and never unpacked, books, software. Cost £640. Sell for £500 (05585) 429.

CGA monitor new quality built Mitsubishi 14" enclosed but without cabinet ideal for budget or self-built PC £65 Bognor (0243) 829975.

WORKSHOP service manual for BBC B, includes circuits £15 including postage. S J Austin, 8 Green Wood Avenue, Chinnor, Oxford OX9 4HN.

AMSTRAD CPC464 mono plus modulator and joystick. Software including Campbells Masterfile, Mini-Office, M/C tutor, Plan-it, Games - silent service, Trivial Pursuits, and many others £120 ono. Tel (0794) 522128.

CYBER-TECH DISTRIBUTIONS

Tel: 0453 544582



SEGA Megadrive PAL or Scart.....	£152!
SEGA Megadrive PAL or Scart wa Alex Kid.....	£167!
NEW PC Engine Core Grafx-Scart only.....	£156!
OR Core Grafx incl Dragon Spirit + Monster Path.....	£176!
NEW Super Grafx PAL or Scart + Battleace.....	£250!
CD-ROM + Interface + game.....	£320!
GAME BOY + game.....	£99!

Please add £5.00 P&P

★ ★ ★ NEO GEO NOW IN STOCK ★ ★ ★

We also have games for all of the above! Phone now! We're so good.....

ITEMS ARE GUARANTEED FOR 1 YEAR

We also buy secondhand megadrives, PC Engines and games, we may even allow P/X. Phone or write with details!!

Remember to tell your friends!!! That Cyber machines are of the highest quality and our megadrives are modified to play both Japanese and American software!! And they'd be a wally to buy from anyone else!!

Send cheques and P.O.'s to: **CYBER TECH DISTRIBUTIONS**, 40 Long Street, Dursley, Glos. GL11 4JB

MERLIN COMPUTERS

OUR PRICES ARE MAGIC

AMIGA 500 ONLY £379.00 INC BATMAN PACK

ATARI 520 STFM POWER PACK£359.99

TRY THE ST's MIDI POWER

CASIO MT 200 AN EXCELLENT LOW COST MIDI KEYBOARD £80.00
OTHER CASIO KEYBOARDS ALSO AVAILABLE

1 MEG 3.5" DISK DRIVES AMIGA.....£89.99

1 MEG 3.5" DISK DRIVES ST£74.99

ATARI STFM 1 MEG INTERNAL DRIVE UPGRADE£74.99

The above drive is an easy to fit 2nd drive complete with mounting tray/facia
SPECIAL OFFER on Amiga 1 Meg upgrades £49.00 without clock, £59.00 with clock

STAR LC 10 COLOUR PRINTER.....£215.00

STAR LC10 MONO PRINTER.....£169.99

STAR LC10 COLOUR HEAT TRANSFER RIBBONS - IDEAL

FOR PRINTING YOUR OWN T-SHIRTS ETC.....£17.99

BLANK DISKS AT AMAZING LOW PRICES

10 3.5" DS/DD life time guaranteed£7.50

10 5.25" DS (per 10).....£3.50

Bulk buyers please phone for bulk prices

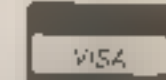
WE STOCK MANY ITEMS NOT LISTED HERE PLEASE PHONE FOR ANY ITEMS NOT LISTED

All prices include VAT and P & P

PLEASE NOTE ATARI 8-BIT OWNERS WE SUPPORT YOU PLEASE PHONE FOR DETAILS

MERLIN COMPUTERS

62 Chester Road East, Shotton, Deeside, Clwyd CH5 1QB
Tel: 0244 822597



Evesham Micros

RETAIL SHOWROOMS

63 Bridge Street
Evesham
Worcs WR11 4SF
☎ 0386-765180
fax: 0386-49761
Open Mon-Sat, 9.00 - 5.30

5 Glisson Road
Cambridge CB1 2HA
☎ 0223-323898
fax: 0223-322883
Open Mon-Sat, 9.30 - 6.00
Specialist Education Centre

1762 Pershore Road
Cottrelage
Birmingham B30 3BH
☎ 021-458 4564
fax: 021-433 3825
Open Mon-Sat, 9.00 - 5.30

ALL PRICES INCLUDE VAT AND DELIVERY
Same day despatch whenever possible. Express Courier delivery £5.00 extra.

MAIL ORDER DEPARTMENT

Unit 9 Richards Rd, Evesham, Worcs WR11 6XJ



Call us now on ☎ 0386-765500

8 lines, Open Mon-Sat, 9.00-5.30. Fax: 0386-765354
Technical support (open Mon-Fri, 9.30-5.30): 0386-40303

VISA



Send an Order with Cheque, Postal
Order or ACCESS/VISA card details

Government, Education & PLC orders welcome
All products covered by 12 Months Warranty
All goods subject to availability, E. & O.E.

ATARI

All our Atari ST prices include: mouse etc. plus 5 disks
of software including 'First Word' wordprocessor,
utilities, 'Neochrome' graphics utility, game and demos.

NEW - 520 STFM DISCOVERY PACK

Good quality, good value package based around the 520STFM computer including
512K RAM, 1Mb Drive and built-in TV modulator. Also supplied is:

STOS Game Creator
Carrier Command
Space Harrier
First BASIC
plus 'Discovering your Atari ST' Book

£259.00
including VAT
and delivery

Also available with 1Mb RAM fitted for only £339.00

520 STE POWER PACK

Amazing value, special ST package from Atari! Includes the very latest 520STE with 1Mb drive,
joystick, mouse, user guide, 5 disks of public domain software, plus an incredible selection of
chart-topping software with a total RRP over £500! Software included is:

R-Type
Afterburner
Double Dragon
Super Hangon
Space Harrier
Overlander

Pacmania
Starglider
Super Huey
Eliminator
Predator
Bombjack

Out Run
Bombuzal
Xenon
Gauntlet II
Black Lamp
Starway

Nebulus
Starjockey
First Music
First Basic
Organiser

£339.00
All
for
only
Inc VAT & delivery

STE Memory Upgrades (SIMMS modules)

Simple plug-in modules with fitting instructions. Please note that you cannot mix RAM
module types eg. (0.5Mb with 1Mb). We will fit them for you free of charge when bought
with any STE; simply add the cost of the upgrade shown below to the price of the STE.

0.5Mb (2x256K modules, upgrades 520 STE to 1Mb) £59.00
2Mb (2x1Mb modules, upgrades 520/1040 STE to 2Mb) £175.00
4Mb (4x1Mb modules, upgrades 520/1040 to 4Mb) £350.00

1040 STE includes 1Mb drive, 1Mb RAM, with built-in TV modulator £399.00
520STFM 1Mb Drive Upgrade Kit with full fitting instructions £74.95
520STFM 1Mb Memory Upgrade Kit, requires soldering £59.00
Mega ST1 with monochrome monitor £599.00
Mega ST2 with monochrome monitor £849.00
Mega ST4 with monochrome monitor £1099.00
SM124 monochrome monitor £99.00
SC1224 colour monitor £279.00
Philips CM8833 14" colour monitor (stereo sound) c/w ST cable £259.00
Vidi-ST 16-tone video frame grabber inc. digitising software £89.00
5.25" External Drive 360/720K 40/80 track switchable £99.00
Lynx Portable Entertainment System inc. PSU & 'California Games' £169.00

Amstrad PC1512/1640/2086

Free with 1512 models... Ability and 4 US Gold Games

	SD	DD	AMS H.D.	SD 21MB	DD 21MB	SD 32MB	DD 32MB
EVESHAM UPGRADED MODELS							
MONO 1512	346.98 399.00	433.91 499.00	N/A N/A	542.81 624.00	629.57 724.00	654.78 638.00	641.74 738.00
COLOUR 1512	433.91 499.00	555.85 599.00	N/A N/A	629.57 724.00	716.52 824.00	641.74 738.00	728.70 838.00
MONO 1640	477.39 549.00	554.35 649.00	738.26 849.00	673.04 774.00	760.00 874.00	685.22 788.00	772.17 888.00
CGA (COLOUR) 1640	584.35 649.00	651.30 749.00	825.22 949.00	760.00 874.00	846.98 974.00	772.17 888.00	859.13 988.00
EGA (ECD) 1640	651.30 749.00	738.26 849.00	912.17 1049.00	846.98 974.00	933.91 1074.00	859.13 988.00	946.09 1088.00
2086 MONO	520.87 599.00	607.83 699.00	781.74 899.00	716.52 824.00	803.48 924.00	728.70 838.00	815.85 938.00
2086 CD	651.30 749.00	738.26 849.00	912.17 1049.00	846.98 974.00	933.91 1074.00	859.13 988.00	946.09 1088.00
2086 12" HRCD	694.78 799.00	781.74 899.00	955.85 1099.00	890.43 1024.00	977.39 1124.00	902.81 1038.00	989.68 1138.00
2086 14" HRCD	781.74 899.00	868.70 999.00	1042.61 1199.00	977.39 1124.00	1064.34 1224.00	989.58 1138.00	1076.52 1238.00

12 MONTHS ON-SITE MAINTENANCE PROVIDED WITH ALL
MODELS OF PC1512, 1640 AND 2086 FREE OF CHARGE!

upgrades / accessories

PC1512 memory upgrade to 640K £29.95
Ma. is Co-processor 8087-2 £119.00
NEC V30 (8086 replacement) £24.95
Archive XL 40Mb Ext. tape streamer £379.00
Amstrad Modem Card V21/23 £99.00
Communicate Fax Card SR £199.00
Enhancer 101 replacement keyboard £74.95
3.5" drive (720K) for SD models £79.95
PC2000 series compatible
5.25" (360K) external drive £84.95
Genius GM6000 Mouse package £32.95
Konix Joystick & Controller Card £28.95

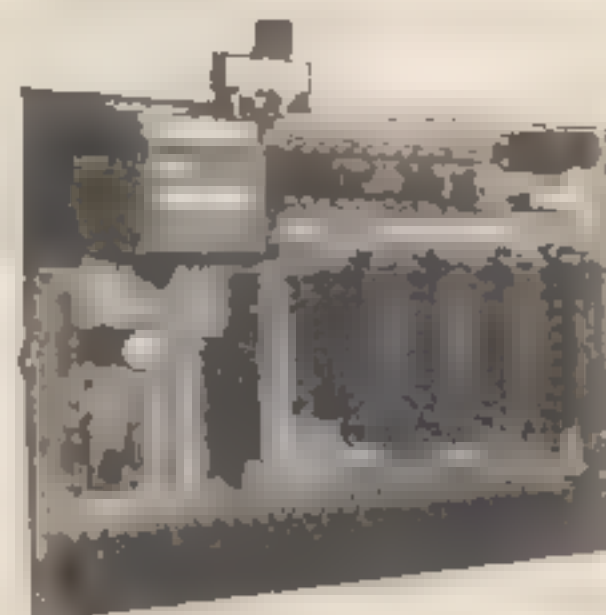
Amstrad PPCs

Low prices on all portable PCs - especially twin drive models
prices in brackets are excluding VAT

PPC512S (£373.04) £429.00
PPC512D (£433.91) £499.00
PPC640S (£477.39) £549.00
PPC640D (£546.96) £629.00

Low price External 3.5" floppy drive (720K), suits any Amstrad PC
1512/1640 inc. DD and HD models, uses no expansion slots £99.95

AMIGA A500 512K MEMORY UPGRADE



ONLY £55.00 inc. VAT & delivery

512K RAM/CLOCK EXPANSION FEATURES:

- ☆ Direct replacement for the A501 expansion
- ☆ Convenient On / Off Memory Switch
- ☆ Auto-recharging battery backed Real-time Clock
- ☆ Compact unit size : Ultra-neat design
- ☆ Uses only 4 D-RAMs for High Reliability
- ☆ Low power consumption

RAM expansion without clock, only ... £49.00

Amiga & ST 3.5" Drives

- ★ Very Quiet
- ★ Slimline Styling
- ★ Fully Compatible
- ★ Top quality Teac/Citizen drive mechanism
- ★ On/Off switch for Amiga
- ★ External plug-in PSU for ST
- ★ Throughport for Amiga
- ★ 1Mb unformatted capacity

Fully compatible, high quality 3.5"
external drives for the ST and Amiga

Amiga version only £64.95
Atari ST version only £69.95

Prices include VAT & delivery

Western Digital Filecards

Upgrading your PC to hard disk? Look no further, we offer the best prices
on top quality hardcards. Thorough documentation supplied, low power
consumption, with free XTree file management software and Speedread. For
Amstrad PC users we supply hardcards tested and formatted, with our simple
software installation procedure. The best packages available!

21MB...£225.00 32MB...£239.00 41MB...£279.00

3.5" disks

10" 9.95 in plastic case £11.95
25" £22.95 in 40 cap case £29.95
Fully guaranteed double sided media

5.25" disks

in 50 cap box £18.95
25" £11.95 in 100 cap box £20.95
Fully guaranteed double sided media

PRINTERS

All prices include VAT, delivery and cable

stair

We use and recommend Star printers since they do
offer an unbeatable combination of features, print
quality, reliability and value. Get it right with a Star
at our special, all in, prices. We can provide on-site
maintenance contracts for only £7.95 extra.

Star LC24-10 feature-packed multifont 24 pin printer, amazing low price ... £239.00
Star LC10 best-selling 144/36cps printer, 4 NLQ fonts, inc. 2 extra ribbons free .. £159.00
Star LC10 7-colour version of above printer, inc. 2 extra black ribbons £209.00
Star LC15 wide carriage version of LC10 £329.00
Star LC24-15 wide carriage version of LC24-10 £409.00
Star FR-10 new Professional 9pin 300/76 cps, 31K buffer, 16 NLQ fonts,
EE-PROM configuration memory and 12 months on-site maintenance £399.00
Star FR-15 9pin as FR10, wide carriage version £499.00
Star XB24-10 Professional 24pin: 27K buffer, 4 SLQ & 25 LQ fonts with
EE-PROM configuration memory and 12 months on-site maintenance £499.00
Star XB24-15 wide carriage version of XB24-10, with 41K buffer £649.00
NEC P2+ budget 24pin £289.00
Olivetti DM100S Super 9pin 200/30 cps, inc. 1 year on-site maintenance! ... £129.95
Amstrad DMP3160/3250Di good value 10" 9pin £169.00
Panasonic KXP1081 reliable budget 10" printer 120/24 cps £159.00
Panasonic KXP1180 super new 9pin with over 3400 typestyles, 11" carriage £179.00
Panasonic KXP1124 good quality 11" multifont 24pin printer £259.00
Panasonic KXP1624 wide carriage version of KXP1124 £399.00
Epson LX800 popular 10" 180/25 cps £159.00
Epson LQ550 (was LQ500) good 24pin printer 150/50 cps £349.00
Mannesmann Tally MT-81 130/24 cps £149.00

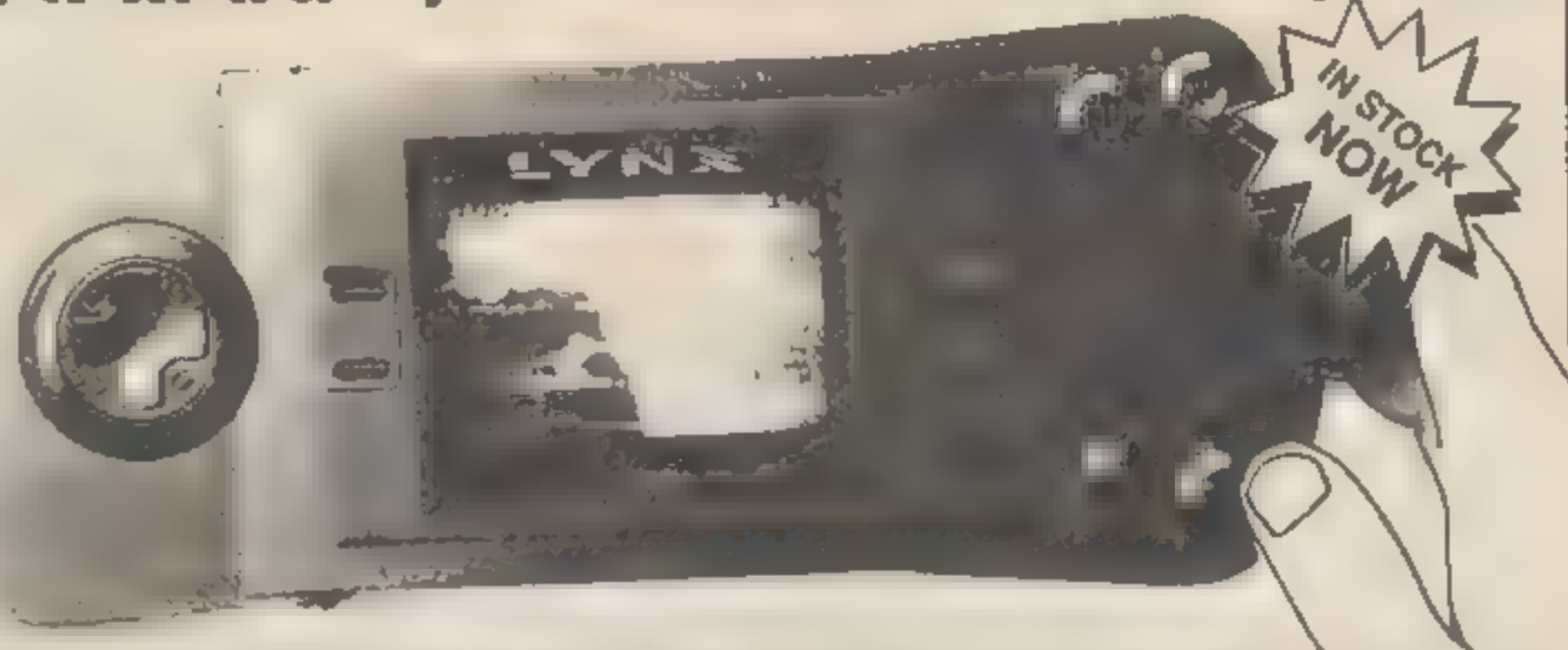
- Fantastic hand-held portable 16-bit video games machine
- Excellent built-in high definition, full colour LCD display
- Capable of displaying up to 16 colours out of a possible 4096
- 32-bit audio processor produces superb 4-Channel sound
- Left or right hand play easily achieved with screen flip option!
- Multiplayer Competitions possible using COMLYNX cable (supplied) to connect with other Atari Lynx systems
- Free California Games (multiplayer) games card supplied!
- Uses 6 x AA batteries (not supplied) or AC adapter (supplied)

ONLY £165.00 including VAT and delivery

Game Cards now available:

Blue Lightning	£22.50
Gates of Zendocon	£22.50
Electro Cop	£22.50
Chips Challenge	£22.50
Gauntlet III	£26.00
Rampage	£26.00

ATARI Lynx Portable Games System



SPECIAL DEALS

All A500 Packages also include the following:

Kapale Kid II	Jaws	Wordwright (w processor)	Super Huey
Battle Squadron	High Steel	Better Dead than Allen	Night Walk

A500 512K Flight Fantasy pack includes 4 software titles and TV modulator	£379.00
A500 512K Batpack includes 4 software titles and TV modulator	£379.00
Amiga 500 1Mb Batpack (OR F.O.F. Pack) features our 1Mb RAM Upgrade fitted	£419.00
Amiga 500 Batpack (OR F.O.F. Pack) with Drive includes our 3.5" External Drive	£439.00
Amiga 500 1Mb Batpack (OR F.O.F. Pack) with Drive features our 1Mb Memory Upgrade plus 2nd 3.5" External Drive	£479.00

External 5.25" 40/80 track switchable drive ..	£114.95	MiniGEN Genlock Adapter	£95.00
Omega Projects MIDI interface	£29.95	Philips CM8833 colour monitor inc.cable	£259.00
Vortex System 2000 40Mb Hard Disk	£499.00	Contriver Hi-Res replacement Mouse pack	£22.95
Vidi-Amiga inc.Vidi-Chrome	£110.00	Amiga 500 dust cover	£4.95

CBM A590 HARD DRIVE

Good quality 20Mb Hard Disk from Commodore, including its own PSU. Features sockets for up to 2Mb of FAST RAM expansion (see below). 80ms Access time, with up to 2.4Mb/sec transfer rate. Will autoboot when used with Kickstart 1.3. Has built-in cooling fan.

Only £379.00

A590 512K RAM Upgrade kit	£36.00
A590 1Mb RAM Upgrade kit	£70.00
A590 2Mb RAM Upgrade kit	£135.00

RAM upgrades fitted free when bought with A590.

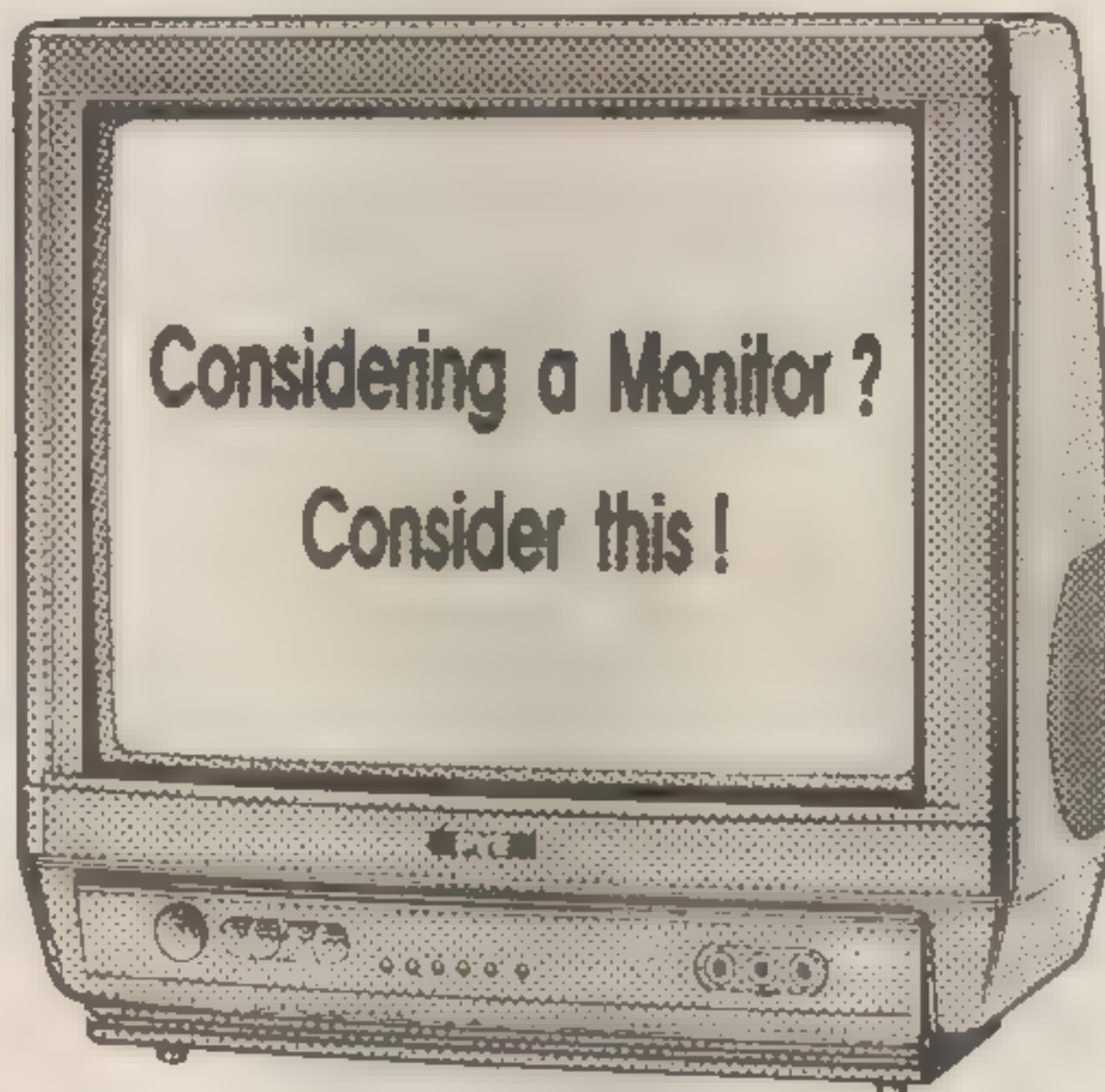
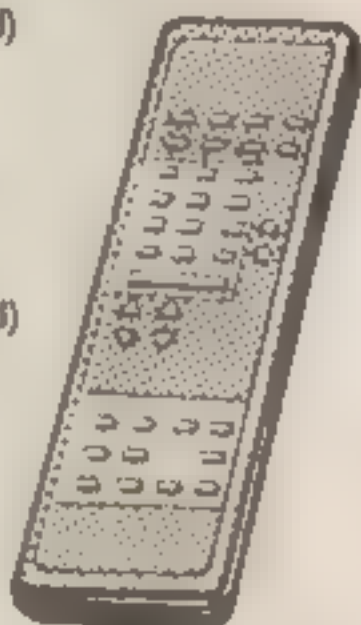
PYE 15" FST TV/Monitor (MODEL 2325)

With its dedicated monitor input, this model combines the advantages of a high quality medium resolution monitor with the convenience of remote control Teletext TV - at an excellent low price!

- ✓ Suits ST or Amiga (cable supplied)
- ✓ Teletext facilities
- ✓ Full infra-red remote control
- ✓ SCART Input/Output Connector
- ✓ Audio/Composite Video inputs
- ✓ 60 TV tuner presets
- ✓ Headphone private listening jack
- ✓ External aerial input (loop supplied)

£249.00

includes VAT, delivery and computer connection lead



Considering a Monitor?
Consider this!

ATARI ABC-286

Prices include Olivetti DM100S printer and Logotron '8-in-1' Integrated software package!

- ☆ 80286 Processor with 8Mhz clock speed
- ☆ 640K RAM standard, expandable to 1Mb
- ☆ 3 AT/XT compatible Expansion slots
- ☆ 1 RS232 Serial and 1 Parallel ports
- ☆ Disk controller supports 2 floppy & 2 hard drives
- ☆ One 3.5" (1.44Mb) floppy drive and a 30Mb hard disk drive fitted as standard
- ☆ Socket for 80287-8 Maths Co-Processor
- ☆ Video graphics adapter supports EGA, CGA, MDA and Hercules, with digital video port
- ☆ 102-key DIN spec. AT-Protocol keyboard
- ☆ Supplied with MS-DOS 3.3 and GW-BASIC

ABC-286 S.D./30Mb with Mono Monitor £ 999.00

ABC-286 S.D./30Mb with EGA Monitor £1149.00

Optional 5.25" 1.2Mb internally fitted floppy drive available £119.00
Prices include VAT/Delivery

OLIVETTI DM100S



Top value, high performing 9-pin dot matrix printer

- 200cps draft, 30cps NLQ print speed
- Pica, Elite and Condensed printing
- Standard Centronics Parallel interface
- Friction and Tractor feed
- Optional auto cut sheet feeder available

ONLY £129.95

Cut sheet feeder available for only £79.95
Prices include VAT, delivery and 12 months on-site maintenance!

olivetti PCS 86/286

FREE WITH ALL MODELS

- ✓ 12 Months On-Site Maintenance
- ✓ Genius GM-02 Mouse with software
- ✓ Logotron 'Eight-In-One' Integrated Package
- ✓ Top 10 Solid Gold Games package



FREE WITH EVERY PCS286: OLIVETTI DM100S 9-PIN PRINTER!

or if you prefer, £129.95 inc.VAT allowance on another printer of your choice.

- ◆ 101/102 key AT-layout PS/2 compatible keyboard (Mini-DIN)
- ◆ 1 x RS232 Serial interface and 1 x Centronics Parallel interface
- ◆ VGA compatible (OVC) display controller fitted standard
- ◆ VGA monitors: 14" Colour / 12" Mono. (dot pitch 0.39mm)
- ◆ Socket for Optional Maths Co-Processor
- ◆ Hard Drive versions: 20Mb (27ms access time) / 40Mb (29ms)

PCS 86

- ◆ NEC-V30 microprocessor 10Mhz clock speed, 0 wait states
- ◆ 640K RAM standard, upgradeable to 2.5Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 720K formatted capacity
- ◆ 3 Full size XT-compatible 8-bit expansion slots

PCS 286

- ◆ Intel 80286 microprocessor 12Mhz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
- ◆ 3 Full size expansion slots: 1 x 8 bit and 2 x 16 bit (XT/AT style)

	SD	DD	SD 20MB	SD 40MB
PCS86 MONO	849.00 746.35	749.00 661.35	949.00 1091.35	N/A N/A
PCS86 COLOUR	899.00 1033.85	999.00 1148.85	1199.00 1378.85	N/A N/A
PCS286 MONO	N/A N/A	1049.00 1206.35	1149.00 1321.35	1249.00 1436.35
PCS286 COLOUR	N/A N/A	1299.00 1493.85	1399.00 1608.15	1499.00 1723.85

Logotron 'Eight-In-One' package includes Wordprocessor, Database, Spreadsheet, Graphics etc.
Top 10 Solid Gold games pack includes Arcade, Adventure, Creativity, Simulation & Strategy titles.

ACCESSORIES

5.25" 1.2Mb/360K drive with controller	£129.95
PCS286 2Mb RAM Upgrade Kit	£175.00
PCS286 4Mb RAM Upgrade Kit	£350.00

SAM Coupe with disk drive and new Dos and Rom. Phone for details on an amazing deal £250 software quick. Chris. Brighton (0273) 304166.

ONE Xerox Inkjet PRN + carts and paper over 30 refills offers above £200. Please buyer must collect. Tel Jon (0905) 53248.

LOCOSCRIPT, Locospell and 24 pin printer drive for the PCW £25. (0902) 341988.

ATARI STFM 520, green monitor, 1 meg ext-drive, DMP 3000, P40, Epson, modem, Yamaha DSS10. All my software and mags £550. Call 9pm offers. (081) 960 2488

ATARI 520STFM with 1/2 meg external drive and 25 games. Still boxed. Excellent condition £190 telephone (0602) 8739144.

AMIGA A500 with Bat/Ten games pack, Photon Paint etc £330. Will swap Casio HT-700 stereo keyboard for QL computer with accessories. Tel Bolton (0204) 492881.

SAM Coupe 256K and slot drive with DOS. Condition as new. Decided against upgrade. Sell for £180. Phone Hassocks (07918) 4530.

ATARI 520STE, perfect condition boxed as new. Bargain at £200 phone Alistair on 031 665 3466 after 6pm.

AMIGA 500 with Star Lc-10 colour printer, over 100 disks with disk boxes, joystick, manuals etc and V22 Bis modem. Offers to- 56 Birchwood Avenue, Lincoln, LN6 0JB.

ST software Quanted £30, Thunderblade £5, Pro Midi £5, Batman £7, Whirligig and Nigels Grand Prix £5, Mad Flunky £3. Tel (0773) 825888 ask for Oli.

SHARP MZ-700 original software, ■ sorts, sell one third original price. Tel Paul, Leeds (0532) 498985 evenings.

ATARI 1040 STFM Silica Shop accessories, Degas Elite, Calligrapher, Assembler, Procopy plus more. Joystick, games, books, magazines £385, 32Mb hard disk (fast) £350. Phone 041 334 2192 ask for Kovacs.

AMSTRAD Action mags for sale. Issues 28, 31, 33 to 52 (22 in all) £22 inc postage or £3 each. Phone (0793) 693068 (Mirek).

AMIGA Cad Aegis Draw 2000 £170 Design 3D £40 ono. Will consider swapping Fighter Bomber, Falcon, Stunt Car Racer £10 each. Ring Eddie 081 553 9678 evenings.

SPECTRUM +2 interface 1, ram turbo interface, joystick, games and mags £60 ono. (0268) 767668

AMSTRAD tapes for sale, about 100 originals going cheap. Phone (0793) 693068 for a posted list, (just leave address) also tape deck and leads for CPC6128.

AMSTRAD 464 computer, colour monitor, 64K Rampack, disk drive, printer, speakers, desk, loads of games and magazines £350 the lot. Tel William (Birmingham) 021 421 6668.

AMSTRAD games for sale, ■ originals and in top condition. Ring (0793) 693068 for a list (just leave address) Also tape deck and leads for CPC6128.

AMSTRAD CPC464 for sale, over £100 worth of games, colour monitor. Sale £270. Phone Birmingham 021 503 0767 between 6 and 6.30pm Mon-Fri.

AMSTRAD colour CPC464, disk drive,

Multiface II, 40+ magazines, 70+ games, blank discs etc. Worth £1000+. Sell at silly price £350. Telephone 081 567 1221 after 5pm.

AMSTRAD CPC464 with CP/M 2.2 and various games. Please take it away. Upgrading to Amiga £60. 081 346 1759 Trevor.

EPSON FX80 for sale, v.good condition, serial parallel interface with extra ribbon and paper, £175 ono. Call Fadi on 061 448 1217.

AMSTRAD CPC6128, colour and almost new Olivetti DM280 printer (still boxed) + games, leads, manuals etc, may split £300 ono 061 766 6249.

PSION organiser Model-XP with manual, v.g.c quick sale, (have upgraded) welcome offers, swaps?? Postal replies only Charles Trager, 7 Grantley Street, Glasgow G41 3PT.

JOYBALL (joystick) can be used with most computers, rapid fire etc. Cost £19.99, yours for only £9.50. Tel (0274) 687249 after 6pm or W/E.

ST clipart 6 double sided discs with mon images, usable with most programs only £12. Tel (0274) 687249 after 6pm or weekends.

NINTENDO Gameboy with Tetris, golf and super marioland cartridges, includes lead for linking other Gameboys together £130 ovno. Phone Andy 061 788 9181 after 6pm

SPECTRUM 128K+ tape player, over 100 games, Ramturbo, joystick interface, joystick £130 Clive disk drive and interface £60 ono. Phone Mr Stevens on 081 968 9722.

ATARI 130XE computer with 1050 double

disk drive £150 will split. Spectrum Plus D disk interface £30 WAVA drive for Spectrum £15. Phone Mr Stevens 081 968 9722.

BBC music 5000/2000/4000 midi recording system/FM synthesiser, bargain £200 sampling drum machine and data recorder Casio R21 £175. Derby (0332) 673283.

MEMOTECH 512 word processor, built in (can expand to include RS232 drives etc). Includes user control port, monitor, printer tape. Fully complete £300 ono (0582) 414137.

SUPRA 20mb hard disc drive for Atari ST £350 ono. Trevor (0787) 223450.

MENU driven PC shareware 400+ titles only £1.25 per disk, send 50p stamps for disk-cat 5.25" or 3.5" to B Guy, ■ Berrylands, Orpington, Kent BR6 9TF.

ARCHIMEDES 440, Philips colour monitor, Riscos, 6 months old, £14.95 ono. Phone (0223) 464633 after 6pm.

BBC-B, Cumana CD800S dual drives, Acorn Z80/6502 second processors, Epson RX-80FT printer, Microvitec colour monitor, Interlekt Prospect modem, over 100 disks, immaculate £700 ono. Telephone Glamorgan (0656) 870264.

COMMODORE 64 Midi interface £20, Steinberg Pro 16+ £30, D+7 editor plus voices £30. Share investor program £30. 061 998 3494.

C16, C64 software for sale. Tape and disk. Send SAE for list. M Campion, 14 Mandale Grove, Bradford BD6 3PA.

FOR sale one Amstrad GT65 green screen monitor, very good condition. Any offers please phone Evesham (0386) 831106 and ask for Richard.

LOOK! AMAZING OFFERS

LIFETIME GUARANTEE ON DISKS

SAME DAY DESPATCH

3 1/2" 39P

INCL LABELS

DISK BOXES
80 CAP £4.50
40 CAP £4.00

3 1/2 DS/HD £1.10

AMIGAS	Mouse Mat...£2.80	ATARIS
BATPACK.....£358	Cleaning Kit.....£2	LYNX.....£158
FLIGHT OF FANTASY.....£359	Ram Pack + clock.....£54	DISCOVERY.....£259
CLASS OF THE 90'S.....£493	Amiga ext drive.....£59	EXTERNAL DRIVE.....£67

★ C64 WORLD CUP PACK £140 ★

ADD £2.50 P&P per disk order. ADD £9 next day delivery.
ALL PRICES INCLUDE VAT

CALL OR SEND CHEQUE TO B.C.S LTD.
349 DITCHLING ROAD, BRIGHTON BN1 6JJ

0273 506269 24 hours 7 days

Phone 0293 565 748

A R B

Fax 0293 612 039

Access Computers (Crawley) Ltd.

AMIGA A500 FLIGHT

AMIGA A500 BATPACK

Only!! £399.00

CLASS of THE 90's

Only £549.00

AMIGA 2000 RANGE SUPPLIED PHONE

Please PHONE or FAX us for

Gold Disk Products, Deluxe Series Products, MSS, Music X, Books, Big Agnus, Ram Boards, etc.

Hard Disk A500/B2000, B1500 Case for A500.

If You Take Your Amiga Seriously, Then Contact The Company Which is Serious About Getting The Most From Your Investment.

Please note prices subject to change. Please check when ordering.
All prices include VAT.

Please note Post & Carriage is extra on all goods supplied please ask.
Payment terms cash, Access, Bankers Order, cheques allow 5 days clearance.
Orders from local Authorities and PLC's welcome (Phone for terms).

Unit 19, Rutherford Way, Gatwick Road, Crawley, West Sussex, RH10 2AU.

PLACE AN AD

FREE!

Selling an old computer?

Need some help?

Got any tips?

Run a bulletin board?

In charge of a consumer group?

After a second-hand bargain?

● You've come to the right place. Just fill in the form to place a free classified advertisement in Shopping Express

● Send your reader ad to:
Reader Ads Department
New Computer Express
30 Monmouth Street,
Bath BA1 2AP

READER ADS ORDER FORM

PLEASE TICK THE CATEGORY YOU WANT YOUR AD TO GO IN:

- | | | | |
|--|---------------------------------------|--------------------------------------|--|
| <input type="checkbox"/> HELP OFFERED | <input type="checkbox"/> GOODS WANTED | <input type="checkbox"/> USER GROUPS | <input type="checkbox"/> BULLETIN BOARDS |
| <input type="checkbox"/> BUGS DISCOVERED | <input type="checkbox"/> EVENTS | <input type="checkbox"/> SERVICES | <input type="checkbox"/> VIRUS WARNIG |
| <input type="checkbox"/> ANNOUNCEMENTS | <input type="checkbox"/> MINI-TIPS | <input type="checkbox"/> FOR SALE | <input type="checkbox"/> PERSONAL |

NAME _____

ADDRESS _____

TEL: _____

Terms and conditions

■ Sorry, NO trade ads. All reader ads must be from private individuals
■ We cannot vouch for the quality of goods and/or services offered in this section. all ads are accepted in good faith.

■ We reserve the right to amend or refuse reader ads at our discretion
■ No pirated software may be sold through these columns. Any reader being offered non-originals should contact us

■ We cannot guarantee that reader ads will appear in particular issues of Express

■ The following declaration should be signed:

My advertisement conforms to the terms above and is legal, decent, honest and truthful

Signed _____

DO YOU WANT TO BECOME A PROGRAMMER?



Established 1968

**Move across to the rewarding
world of IT.**

We have a series of short and long
term training programmers in
Computing and Information
Processing.

- * C & G 424/425 Certificate in
applications programming.
- * C & G 418 Computer Programming
& Information Processing.
- * Evening courses in DBASE, WP,
Spreadsheet Analysis.
- * Evening courses in Pascal, BASIC &
COBOL.

**Contact Central London College on
01-580 4596.**

TRAINING FOR YOUR FUTURE



SHEFFIELD BASED EXPERIENCED 6502 PROGRAMMER REQUIRED

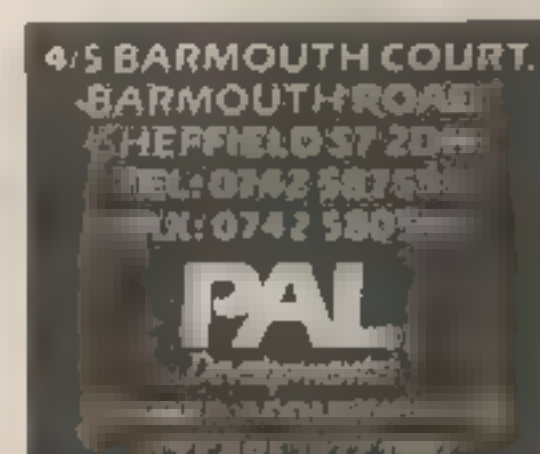
*PAL Developments has a vacancy for an experienced
6502 programmer working on Commodore 64,
although experience of producing conversions to
Nintendo and Atari 8 bit would be an advantage.*

*An excellent working environment alongside an
already established dedicated team of programmers
and graphic artists, applicants should be able to show
a good track record in producing high quality machine
code games programs. References will be required.*

*Salary is negotiable and will reflect the importance of
this position.*

*In the first instance apply, preferably in writing,
to Mr. A. D. Palmer at the address below,
or telephone for an appointment.*

*Citizen
SOFTWARE*



Artists and Programmers!

An advert from The Sales Curve containing no jokes.

Leading up to the creation of our own label "STORM", our 30 strong
team need more artists capable of reproducing coin-op quality graphics
and 16 bit programmers capable of producing coin-op quality code.

You will be working on original titles and coin-op conversions for release
on the "STORM" label which will be launched within the next few
months.

If you want to help make STORM into a leading software label of the
90's phone Simon Pick on (071) 585 3308 **NOW!**

Software health warning: Working for this company can seriously affect
your ability to produce bad software with bad graphics.

PROGRAMMERS

8 BIT GRAPHIC ARTISTS

We are looking for talented people to join our successful team in **SWITZERLAND!**

A good knowledge of machine code in either Z80, 6502, 8086, or 68000 is required.

WE ARE WAITING FOR YOU!

If you think you've got what it takes then contact Mark Grimmer.

Oh! Not to forget, we will pay your flight to the Swiss mountains....



LINEL,
Guetlistrasse, 9050 Appenzell,
Switzerland.

Tel: 01041 71 87 49 19

Fax: 01041 71 87 49 21



Staff Writer

Your Sinclair

Britain's Biggest Selling Spectrum Magazine needs a new Staff Writer.

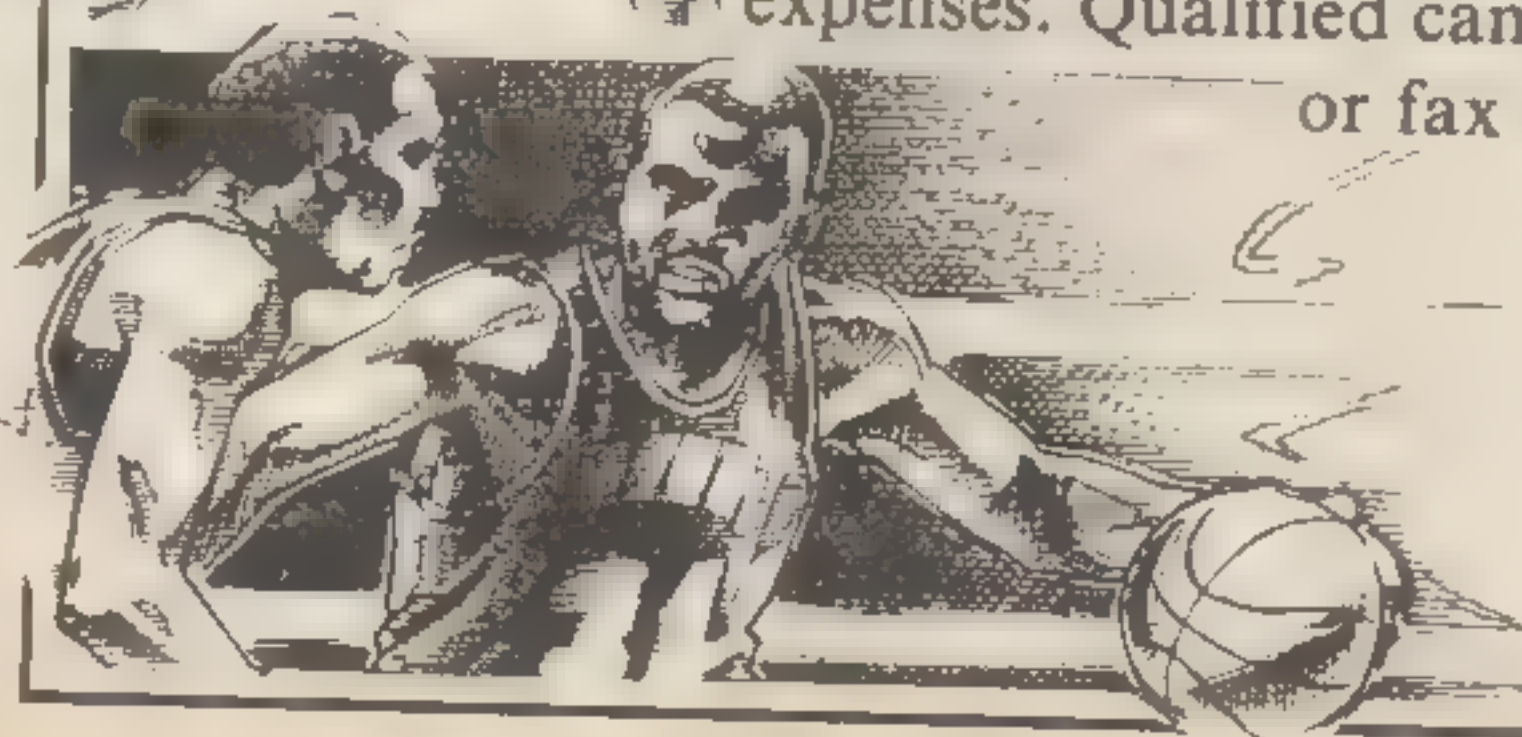
- Launched in 1985
- Now over 125 staff
- 10 national newsstand magazines
- Market leader in computer titles
- Exciting launch plans
- Britain's fastest-growing publisher

- Do you own a Spectrum and have a working knowledge of how it works?
- Are you familiar with the wide range of entertainment software available for it?
- Are you outgoing and friendly? Can you write informative and entertaining copy? (And write it fast?)
- Are you keen to get involved in most aspects of magazine production?

If you've answered "Yes!" to most (or all!) of these questions, write to Matt Bielby, The Editor, Your Sinclair at the address below, including your CV and a 600-800 word sample review of a recent computer game (any machine) written in the YS style. (And get it to us by 31st May please!)

Future Publishing Ltd, Beauford Court, 30 Monmouth Street, Bath, BA1 2AP.
Tel: (0225) 442244

CINEMAWARE



The creators of such trend setting hits as *Rocket Ranger*, *It Came From the Desert* and the *TV Sports* range have current openings for programmers who wish to relocate to beautiful Southern California (7 miles from Malibu). Responsibilities will include developing products and tools for dedicated video game consoles. Qualified candidates **must** have demonstrated game experience in 6502 and/or 68000 assembly language. Prior Nintendo, PC Engine or Sega experience is strong plus. A University degree is helpful but not mandatory. Cinemaware offers excellent compensation, including royalties and will pay for all relocation and U.S. immigration expenses. Qualified candidates should immediately respond via post or fax to:

David Todd
Vice President, Research & Development
Cinemaware Corporation
4165 Thousand Oaks Boulevard
Westlake Village CA 91362

1- 805 495-6515

1- 805 379-9401 FAX

All replies will be held in strictest confidence

BBC B, 40/80 track disk drive, sideways Roms, ADFS, loads of software and manuals £200. Spectrum and Electron also for sale. Tel (09274) 26970.

AMIGA 500, TV modulator Amiga 501, 2nd disk drive, Juki colour printer, TV modulator, joysticks, mousemat, programs, games and blank discs. Manuals £800 ono will not split (0306) 712803.

STE 512K memory upgrade £45 inc P&P. Write for details. Mr S Cheung, 298 Biscot Road, Luton, Beds LU3 1UZ.

CBM 64C disc drive, load it datasette, power cartridge, games on disc and tape vgc. £200 ono. Phone Hastings (0424) 424747.

ARCHIMEDES Midi shareware, EMR studio 24 and V2 unregistered, unused only £120 new normally £170. Call Greg (0932) 567614 Staines, Chertsey.

SPECTRUM +2, books, joysticks, over £400 of original software including Afterburner, Double Dragon, WP package, Wee Le Mans and more. £199 ono. Phone (0341) 6673.

COMMODORE 64, 1541 drive printer, modem final cartridge, books, lots of software includes Shoot Em UP Construction Kit, Guild of Thieves, sell for £250. Buyer collects. (0247) 465590.

SEGA megadrive for sale, Scart inc joy-pad, three games, power supply, two months old. All boxed. Worth £310 sell for £230. Tel 021 783 8894 ask Norman.

PANASONIC KX P1081 printer, brand new £200 ono. Also loadsa games (Amstrads). Send for list. J Clarke, Rose Cottage, Rectory Road, Mellis near Eye, Suffolk IP23 8EA. Tel 037 983 601.

ELECTRON games and magas 1/2 price.

excellent condition. ring Carl 0962 65736 or send SAE to Carl, 14 Browning Drive, Winchester Hants SO22 5AR for games list.

MODEM - Pace Nightingale also Atari s/ware (originals). Sell separate or together all cheap (04024) 57507.

I.C.L one per desk, colour monitor, answer phone, colour printer, twin micro-drive and business graphics, WP etc. VGC £1750.00 ono. Call 081 866 9808.

JOYSTICKS! Cheetah with Pilot Grip and 4 fire buttons, Autofire brand new £6. Wizmaster joystick £7, both £12 0742 438542. J Smith, 45 Maplecroft Crescent Sheffield S9 1DN.

AMIGA Action Replay cartridge, boxed £55 ovno. Features program "Freezer" picture, sound grabber, game "Cheater". M/C monitor, etc. Tel Julian on (0742) 438542 after 5pm.

AMIGA 500 Batpack with 10 titles, joystick, mouse, wp software, 4 months old. £250. No offers. Also computer desk £30. All as new. Tel (0702) 548109.

APRICOT PC, twin floppies, mono monitor, original handbooks, much software, including database, wordprocessor and spreadsheet. Mint condition and excellent working order £185 ono. Tel 091 586 4357.

ATARI 520STFM, external disk drive, over £750 of software, many extrad, worth over £1100, sell for £350. Phone David on Sunderland 091 529 3363 evenings/weekends.

STE upgrade 520 1040, 2 sets available £45 each including postage. Phone Jim, daytime 0232 241573 evenings (0232) 794812.

IBM displaywriter 1984 screen, keyboard, disk drive, 60 disks, printer, table, printer acoustic hood, all in working order £150. Worcester Park, Surrey. Tel 081 337 8269.

SEGA master system, light phaser, 3D glasses, control stick, loads of games. Do me a favour, buy my Sega. Tel (0272) 861019 £275 ono.

ARCH A310M colour, Risc-OS, 20Mb hd, 4 slot backplane, 5.25 disc buffer, manuals, software, no serious offer refused. Phone (0895) 71815.

COMMODORE user, the one, games machine, C + VG, Ace, 2 Zap, zero, Amiga Action, Amiga Format Collection worth £150 sell for £50 ono. Phone 081 854 0206 after 9pm.

CASIO CZ1000 digital synth, full size keys, programmable sounds, 2 midi ports, full control of DCO, DCW, and DCA vgc £135 ono. Steve (0992) 445750 (Hoddesdon).

SINCLAIR PC200 computer, colour monitor, mouse and joystick, 16 months old, includes 6 games plus word processor, business info. Disc/ £450 ono. Waybridge (0932) 840530.

CBM 64 computer and games for sale. Over £100 worth of games, all complete for £80. Ring 0494 33764 and ask for Richard. Phone after 6pm.

SHARP 64K ram card and thesaurus for Sharp IQ7000 and IQ7200. £120 for both will split. 081 202 7738.

SINCLAIR QL, 512K expansion, games and serious software, mouse, etc £150 ono or will consider splitting. Call (0602) 820106.

SWAP my Rascal 1222 modem (inc ST

lead) for your quality word processor is Protext or That's Write. Others considered. Phone Dave after 8pm (0375) 679554.

ATARI Portfolio 128K memory card unopened in case. Bought by mistake for 1040 STE cost £128. Sell for £90 ono never used. Phone Tim between 5-10pm on 051 427 1444.

AMSTRAD 1512 DD HD 640K with a great deal of software, both games and applications. Excellent condition £400 phone (0276) 29303.

FOR sale Apricot X1 PC excellent working order. Price £200. Contact Stephan 061 339 0407.

AMSTRAD PC1512, colour monitor, double disk drive, 40 mega byte hard card £600 ono. NEC P2200 pinwriter printer £200 ono. Tel (0843) 603402 preferably between 7-10pm.

STARGLIDER 1 + 2, Carrier Command, Robocop, Sentinaz, Wizball, Tracker, Arkonoid 2, B-Lamp, Test Drive, Flying Shark, Plus PD. For Atari ST £30 the lot. Tel 076 387 286.

ATARI STFM 1 meg memory, 1 meg disk, fast basic, GST 'C', plus games, all in good condition £300. Call Adrian on Brookwood 048 67 87743.

PORTFOLIO, plus parallel interface, plus 32K memory card, cable, manual, six months old. Cost £350 want £200. Phone Carl (Reading) (0734) 484897 evas.

ATARI 520 STFM 1/2 meg drive, perfect condition. Complete with mouse, leads, etc, £150. Tel (0732) 883037.

BLITZ turbo for the Atari ST, brand new £15.00 tel 021 311 1068.

ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI

A brilliant offer for readers of New Computer Express!

Devpac ST 2

FROM HISOFT ONLY £44.95

Devpac ST Version 2 is widely regarded as the most powerful assembly language development system for the Atari ST. It incorporates a debugger, stand-alone assembler and a fast linker

IT INCLUDES:

- **GenST** Assembler is a high-performance, full-featured, two-pass Motorola standard macro assembler at up to 75,000 lines per minute. It has multiple modules and sections, repeat loops and macro calls that maybe nested as deeply as memory allows.
- **MonST** Debugger is an advanced symbolic monitor, debugger and disassembler. Now in addition it can offer Multiple window display, full expression evaluator, up to 22 characters in symbols, viewing of source files and conditional breakpoints.
- **Example Files** of a wide variety including a full GEM type windowing application and an example desk accessory.

The package comes complete with an extensive ring-bound manual plus notes on the various operating system levels and debugging strategies.

Order now by phone from the NCE mail order service or send the coupon to our FREEPOST address.

HOTLINE NUMBER 0458 74011

DevpacST 2

version 2

Complete Assembler/Debugger System for the Atari ST Computers

**SAVE
£15**

Yes, I would like to order a copy of Devpac ST 2

Name

Address

Tel No

I would like to pay by Access Visa Cheque PO

Please debit my credit card

No

Expiry Date

Tel. No

Send & make cheques payable to Future Publishing, FREEPOST, The Old Barn, SOMERTON, Somerset. TA11 7BR

AMIGA & ST NOTTINGHAM

Amiga Batman Pack.....	£340.00
Amiga Flight of Fantasy	£350.00
STE Powerpacks	£340.00
Cumana Disc Drives.....	£75.00
Memory Upgrades from	£50.00

Software from 1/2 price and less.
All prices include VAT.

Mike Jervis
16 Bit Computers
19 Portree Drive, Rise Park,
Nottingham, NG5 5DT
Tel: (0602) 274369

MEL GROUCHER
-COMPUTER
Fun Line
0898 299399

charged at 25p per min.
cheap rate 38p per
minute at all other
times



New entertaining event
Starts EVERY WEEK!

Proprietor: B. Everitt, P.O. Box 71, Ninton, Warwick, CV35 9XA.

QUALITY SHAREWARE for the PC on QUALITY DISKS

1000's of programs available on all subjects -
catalogue on disk (5 1/4 or 3 1/2)
All Software supplied on
Verbatim Branded Disks.

PRICES

5 1/4" 10 for £10.00
3 1/2" 10 for £14.00

BPD & SL

17, KNOCKBREA PARK
BELFAST BT6 0HB
Telephone:
0232 645942

HIGH QUALITY LOW PRICES GREAT SERVICE

That's what you get when you order from **MICROBITS**. We supply high quality **DISKS, PRINTER SUPPLIES, PAPER & LABELS** and a wide range of **COMPUTER ACCESSORIES** all at **AMAZING PRICES**. Send 30p stamp for **FREE** illustrated price list. (Or telephone (0382) 610591 for details.)

MICROBITS. 63 HIGH ST, LOCHEE, DUNDEE. DD2 3AT.

**Music
Writer™**
DEMO TAPE

£3 Refundable
against
purchase

POST
FREE

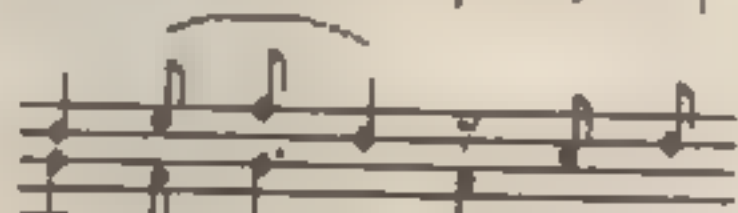
G Rowland
P.O. Box 49
Dagenham
RM9 5NY

**Music
Writer™**



128/+2/+3 SPECTRUM
Three part score writing system

- Comprehensive range of music symbols
- Easy to edit and move bars
- WYSIWYH - an invaluable learning aid
- Loads and runs on all Spectrum 128s
- Manual, ring binder and demo scores
- +3 auto disc transfer



Only
£19.95

inc. VAT

G Rowland
P.O. Box 49
Dagenham
RM9 5NY

COMPUTALLATIONS

COMPUTER CALL-OUT SERVICE AMSTRAD PC AMIGA A500 ATARI, etc.

The Call-Out Service tailored for the Home User and Small Business too!
Problem Shooting

Installation and configuration of New Equipment and Software
Hard disk/Hardcard Service Independent advice, etc.

VERY COMPETITIVE PRICES

HOURS OF SERVICE

MONDAY TO SATURDAY 5.30pm - Midnight
SUNDAY 9.30am - 5.30pm

We don't offer ON-SITE MAINTENANCE CONTRACTS OR HARDWARE REPAIRS

Phone for Further Details and Charges

RING NOW ON BIRMINGHAM: 021 458-5754

MOBILE TELEPHONE: 0860 474-014

COMPUTER REPAIRS

Specialists in Home and Business Computers, all makes repaired.
ATARI, AMSTRAD, COMMODORE, SPECTRUM, SINCLAIR etc.

Atari Approved Service Centre

We also repair Printers, Monitors, Disk Drives etc.

FREE estimates, all work fully guaranteed.

A.M.C., UNIT 4, WESTON ROAD INDUSTRIAL ESTATE,
STRATFORD-UPON-AVON, WARCS, CV37 0AH
0789 292269

SHEKHANA COMPUTERS

Neo-Geo + UK PSU	£475.00	PC Engine Plus Free Game	£179.99
Magicians Lord	£225.00	Software From	£24.99
Vietnam 1975	£225.00	Gameboy Console	£79.99
Golf	£225.00	Gameboy + Any Game	£99.99
Hang On	£225.00	Gameboy Deluxe	£109.99
Baseball	£225.00	Software From	£24.99

Sega Megadrive + Free Game	£179.99	Lynx System Plus	
Sega 8-Bit Converter	£39.99	Chips Challenge	£159.99
Hand Grip Joystick	£19.99	Software From	£24.99
Software From	£24.99		

All above are in stock. All the latest products.

Send Cheque/PO to: **SCS**, 655 Green Lanes,
London N8 0QY. Tel: **081-340-8565/081-348-2907**.
Fax: **081-889-9412**. Access and Visa cards welcome.

The South West Software Library

Public Domain Software
for the Atari ST

Software tools from ARC to ZOO - and so much more. The best
catalogue (current update level 4.2) and fast friendly service. Write:

The South West Software Library
PO Box 562, Wimborne, Dorset BH21 2YD

3 1/2"
DSDD Disks
100% Certified Error Free

39p
Price incs. VAT & Labels
All our disks are
fully guaranteed

* Order on our answering machine outside office hours on (0228) 35208. Free bumper pack catalogue with every order. High quality mouse just £2.75 each inc. VAT. Please add £2.95 per order. Make Cheques/PO's payable to:

J. L. Edgar Group
FREEPOST, 193 Brampton Road, Carlisle, CA3 9BR

GUNFIGHTER



USE YOUR VOICE TO
OUTDRAW THE
GUNFIGHTER

CASH PRIZES
0898 31 35 94

INFODIAL POBox 36 L51 4TN Call charges 25p Per Min Cheap 38p Per Min All Other Times

**ALL COMPUTER HARDWARE AND
SOFTWARE WANTED FOR CASH
OR EXCHANGE**

NOTHING REFUSED!!

01 727 0424

WESTONING LTD

**Amiga Rams
512k £35
with clock £39**

**Sony 3.5" DS/DD
Branded Box 10
£7.50!**

LC10 colour ribbon £6.75 | LC10 black ribbon £2

3.5" DS/DD from 28p - S.A.E. for details

Prices include VAT. Add £2 for each order for P+P



Dept NCE, 12 Sanderson Road,
Westoning, Bedford, MK45 5JY

Tel: (0525) 718668/(0836) 775060 Fax: (0525) 711789

16/32 P.D.

PUBLIC DOMAIN FOR THE ATARI ST
Large Selection Prices start from £1.00

Send A4 SAE with 25p stamp for catalogue or £1.25 for
catalogue DISK with extra goodies to:

35 Northcote Road, Strood, Kent ME2 2DH

Tel: 0634 710 788

Please state type of disk (single/double sided)

FLIGHT OF FANTASY FROM FLIGHT SIMULATIONS

Amiga 500.....£351.95 +£3.00 P&P inc. VAT

Everything for Sublogic Flight Simulator fans
eg. Maps, Yokes etc.

Commodore 1084 Monitor£217.84 + £5.00 P&P

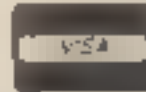
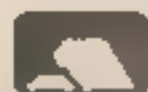
FLIGHT SIMULATIONS

25 Milner Avenue, Bury, BL9 6NG.

Telephone: 0831 334 077 (Mobile Phone)

or 061 761 1902 (6pm-10pm)

Fax: 061 792 6102



PUBLIC DOMAIN SOFTWARE AND SHAREWARE

Extensive ranges of Public Domain Software & Shareware available for
the following Computers

IBM PC & COMPATIBLES

including AMSTRADS
1 1/2" 5.25" disk

Apple MACINTOSH range
£4.99 per disk

COMMODORE 64 & 128

at £2.95 per 5.25" disk

COMMODORE AMIGA
from £3 per disk

ATARI ST
from £2.80 per disk

COMMODORE PLUS

from £3.75 per disk

APPLE II RANGE
from £3.75 per disk

CATALOGUES

Catalogues and lists are available for all
the above. Please send SAE or phone if
you would like any further details. Please
state clearly which machine(s) you are
interested in.

ORDERING

Please note that the above prices are
FULLY INCLUSIVE of VAT and Postage.
Orders are normally despatched within
two working days of receipt. We cannot
accept payment by credit card.

KINGSWAY COMPUTERS

72 Glencoe Road, Sheffield, S2 2SR

Tel: 0742 750623

YOU CAN'T TRUST MAIL ORDER!

How many times have you thought this? Have you tried mail order companies and
been disappointed with the service you received?

MAYBE you placed an order and had to wait weeks/months for your goods to arrive.
We only advertise items we have in stock. All our hardware prices include courier delivery
to your door. We will dispatch your order quick. No more waiting around for weeks, and
at prices we believe to be very competitive. Give us a try, you won't regret it!

ATARI 520 STE BASIC PACK	275.00	ATARI MONO MONITOR	£95.00
ATARI 520 STE POWER PACK	359.00	AMIGA EXTERNAL 3.5 DISK DRIVE	70.00
ATARI 1040 (CHOICE OF 3 PACKS)	449.00	STAR LC10 MONO PRINTER	159.00
AMIGA A500 BATMAN PACK	359.00	STAR LC10 COLOUR PRINTER	220.00
AMIGA A500 CLASS III 90'S PACK	519.00	BLANK 3.5 COLOURED DISKETTES	
ATARI EXTERNAL 3.5 DISK DRIVE	78.50	RED, YELLOW, BLACK, GREY, BLUE	
ATARI LYNX CONSOL	£165.00	100% ERROR FREE GUARANTEED.....	10 FOR 6.75

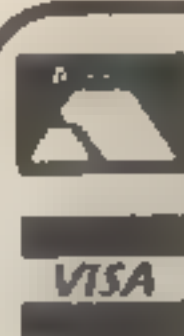
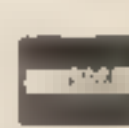
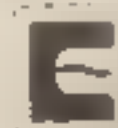
THESE are just a sample of our prices. If you can't see what you want it doesn't mean
we haven't got it. If we haven't got what you want we can get it FAST!! Don't forget all
prices include VAT. Delivery on hardware is FREE. For orders below £50 please add £2.00
P&P. Please ring for all your ST and AMIGA requirements. CALLERS WELCOME.

DRIVE [A] COMPUTER SUPPLIES

9 WELLINGTON CHAMBERS, SMITH STREET, ROCKDALE,

LANCS OL16 1TU

Tel: (0706) 861104



clipart
AMIGA IBM/PC



Over 2000 simple clipart pictures compiled into 4 sets. Each set
contains over 500 images in .PCX format (PC), ILBM (AMIGA) with
printed picture catalogue. For IBM & PC compatibles and AMIGA.
Sets 1 to 4 £14.99 each inclusive VAT & 1st class same day post.
Buy 4 sets with catalogues for £44.97 save £14.99
For Timeworks, FSE, Ventura, PageMaker, etc on the PC
Pro-Page and CityDesk etc. on the Amiga in ILBM (IFF ext)
FREE! PD & Shareware catalogue for IBM & PC only, just phone.
State PC or Amiga when ordering clipart, we cannot exchange.



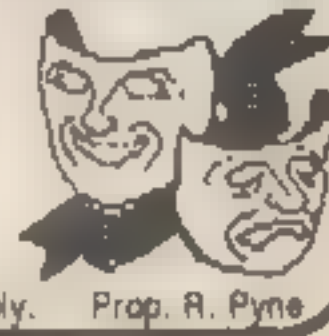
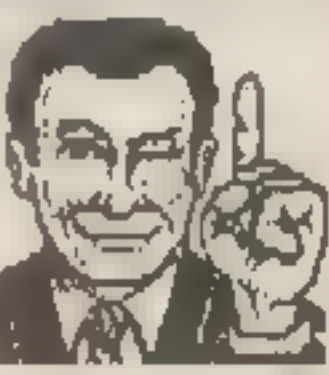
Country Publications

Dept NCE, 79-79a Highcroft Ave.

Oadby, Leicester. LE2 5UH

Tel: (0533) 715160

Open 9-30 to 5-30 Closed MONDAYS and 1st 2 weeks in July.



Prop. R. Pyne

HEATH SALES + REPAIR + SPARES COMPUTERS

SPARES

6510	10.95	CBM 84	30.00
6526	11.50	CBM 16	30.00
6581	15.00	CBM 4	30.00
6569	25.50	CBM 128	40.00
Kernal ROM	11.20	CBM 1541	40.00
Basic ROM	12.20	CBM PRINTERS	40.00
Char ROM	8.25	MICROVITEC MON	40.00
PLA	9.75	AMSTRAD CPC	30.00
8501	8.95	BBC B	40.00
8360	21.50	SPECTRUM 48K/48+	20.00
Amstrad SPARES	PHONE	SPECTRUM 128/+2	20.00
AMIGA SPARES	PHONE	AMIGA A500	40.25
CBM 128 SPARES	PHONE	ANY OTHERS	PHONE
Sinclair SPARES	PHONE		

REPAIRS

CBM 84	30.00
CBM 16	30.00
CBM 4	30.00
CBM 128	40.00
CBM 1541	40.00
CBM PRINTERS	40.00
MICROVITEC MON	40.00
AMSTRAD CPC	30.00
BBC B	40.00
SPECTRUM 48K/48+	20.00
SPECTRUM 128/+2	20.00
AMIGA A500	40.25
ANY OTHERS	PHONE

SALES

MINISCRIBE 32MB	240.00
MINISCRIBE 40MB	250.00
CBM CASSETTE	28.75
MICROMATE PSU	24.05
(FORVIC20+64REPAIRABLE)	
EPSON LX850 PRINTER	105.00
3 1/2" DISK IN 5 1/4 FRAME	85.00
GENIUS MOUSE + PAINT	50.00

PHONE FOR BEST PRICES
ON PACKARD BELL PC's

ALL PRICES INCLUDE VAT & P&P
REPAIRS 24HR TURNAROUND 2 MONTHS
GUARANTEE

TEL: 021 707 7160

HEATH COMPUTERS &
ELECTRONICS LTD
OFFICE: LIMEHOUSE
KINGS ROAD
TYSELEY
BIRMINGHAM B11 2AG

CROMPTON COMPUTER SERVICES

REPAIRS, SALES AND
SERVICE

ATARI 520 - £250.00
AMIGA 500 - £350.00

4 Bullington End Road, Castlethorpe,
Milton Keynes, MK19 7ER

Telephone: 0908 510284

THE GAMES CENTRE

FULL PRICE GAMES FOR COMMODORE 64
SPECTRUM * CPC * ATARI ST * AMIGA * PC

LARGE SELECTION OF BUDGET GAMES
COMMODORE 64 * SPECTRUM * CPC

Unbranded 3.5" disks 10 for £6.99, 50 for £32.99, 100 for £59.99
Printer Ribbons Disk Boxes Branded Maxell Disks

Compute-iT

151 HIGH STREET, TEWKESBURY GLOS
TEL: (0684) 290097

All prices include VAT & FREE postage

TELEGAMES

Europe's Largest
Stock of Video
Games
& Cartridges For -

Still
Europe's No 1!
Why Wait, Call in
or order now.

SEGA

SEGA
MEGA DRIVE

Nintendo

PC
Engine

NINTENDO
GAMEBOY

COLECO
VISION

SNK
Neo-Geo

NEO GEO
now in
stock!

"What Video Game"
2 hour VHS film. Shows
all the main game
systems and over 400
games. Available now
£14.95.

ATARI
2600
and
7800

PC Super
Grafx now
in stock!

The leading Video game specialists.
Send for lists (state make of game)

Telegames, Wigston, Leicester, LE8 1TE.

Tel: 0533 880445, 0533 813606

or 0533 889989

AMIGA 500 (1mb) system inc A501, 1084
monitor, Cumana 3.5" external drive, metal
stand. Many books and development soft-
ware £800 ono. Contact Dave (0322)
528477, 7pm.

AMSTRAD CPC 464+ green monitor, soft-
ware, graphics system, word processor,
database etc. Worth £550. Reduced from
£230 to £180. Upgrade reason for sale.
Danny (0543) 504042.

AMSTRAD 464 with colour monitor £199
with mon monitor £149 complete with soft-
ware and magazines. Ring (0908) 608194
after 4pm.

1 MEG Atari ST plus 25 to 30 original games
£350. Tel (0269) 308820. 5 Osbourne Place,
Tweedmouth, Berwick.

AMIGA Afterburner £10. F16 Combat Pilot
£10, Lelshire Suit Larry I £10, Bloodwych
£10 (+ hints), Populous £10, Publishers
Choice £50. Phone Spike (0222) 627918.

AMIGA software new, original. Infestation,
Shadow of the Beast, Stryx £10 each + P&P.
Phone Norman (0245) 352538.

AMIGA goodies, 2nd drive, 512K memory
expansion, modulator, 16 256 x 4 x 100
A590 chips. Gives 2 meg. Good prices.
(0203) 366477.

TEXAS Instruments TI-99/4A computer, with
power pack, TV modulator, User's Refer-
ence Guide £40 ono. Tel (0453) 545983.

SPECTRUM +3/128K, manuals, disks,
games, tape leads, good working order.
£130 ono. Phone Weymouth (0305) 772261.
Must collect! Sorry cash only.

ATARI XL/XE game cassettes: Spiky Harold,
Rearguard, Vegas Jackpot, Artist, Danger
Ranger, Captain Sticky's Gold, Sea Dragon,

Canyon Climber, only £12 the lot (originals)
021 422 7579.

ROBOCOP for the Amiga 500 three months
old only £10. 021 477 5538.

COMMODORE Computing International mag-
azines from March 1987-January 1988 60p
each. All in good condition. Send magazine
sized SAE. Stewart, 1 Chestwood Close,
Sticklepath, Barnetaple, north Devon.

YAMAHA EMR1, midi drum synth, boxed
and almost new £135 also Archimedes origi-
nal games for sale. Please phone for list and
prices (after 5.30pm) (0705) 297193
Richard.

AMIGA A1000 as new. Monitor, mouse, joy-
stick, software worth £650. Sell for £480
ono. Call Paul 081 236 1154 (day) 081 705
2001 (eves).

MEGADRIVE Pal/Scart. One month old.
Includes Golden Axe, £200 including packing
or offers, hardly used hence price. Tel 091
2533419 between 4-5pm weekdays.

SELLING Amiga games, Batman, Starflight,
Space Rouge, Elite, DPaint 2, Captain
Blood, Interceptor. May swap for Ultima 4 or
other RPG. Phone Stuart 031 334 3567 6pm
+

AMSTRAD LQ3500 24 pin printer plus 5
spare ribbons. £200 ono. Tel (0302) 360201
in office hours.

MASTER compact 2nd drive, comal, Rom,
DKH mouse, joystick, printer lead, software
includes Exile, Artroom, Elite and more. Sell
the lot for £360 ono. Telephone 081 508
7648 eves.

AMSTRAD CPC 464 with green screen
monitor, TV modulator, £255 worth of
games, 2 joysticks, manual, boxed, excellent

condition, £185 ono. Tel (0623) 8433355
buyers collect.

C64c + games and joystick. Sell for £150.
Oceanic disk drive + games still under war-
ranted. Sell for £80 or both £200. Ring
Jonathan (0379) 870 233.

C16 boxed originals for sale. Send SAE for
list (going fast so be quick). Trevor Williams,
44 Elm Park, Clonmel, Co Tipperary, Eire.

ATARI 520STFM + joystick, 25 games,
mouse mat, one meg internal drive, six
months old, under guarantee, little used,
buyer collects. £250 no offers. Phone Peter-
borough (0733) 48258.

AMIGA games, Wizball, Space Harrier, Plo-
nner Plague, Out Run, Heroes of the Lance,
Time and Magic £10 each or the lot for £50.
Please contact Adam on (0329) 235 833.

BBC B Issue 3. Acorn DFS SS, 5D 40T
drive, Dump 3 Rom. Interword, Intersheet,
Interchart Mega 3 Rom, Manuals, Leads,
discs. Cover stand £350 (0926) 339932.

ARCHIMEDES First Word Plus Release 2
word processor. Brand new, unwanted,
unused. £70. Phone Leamington Spa (0926)
339932. Evenings only all offers considered.

AMIGA datadisk for Superbase Personal.
Complete British Amiga Magazine index.
SAE for details or £6 to: Twiddle, Little-
ham Close, Bransholme, Hull HU7 4RR.

AMIGA original games for sale, Operation
Wolf, Outrun, Buggy Boy, Thunderblade,
Test Drive, Interceptor, Street Fighter, Leath-
ernack, £10 each. Pool, Sidewinder £5 each
or £70 for the lot. Contact Axx 021 784
2384.

ATARI 1040 STF internal clock card and
Multiface ST (Toolkit adn disc organiser)

bergain at £260. Phone (0252) 825001
(Hants).

SALE Supercalc 3.01 for Amstrad PC E25
Norton C Guides for programming £25.
Boxed with manuals. Ring 021 471 3335 ask
for Mr Lee.

ATARI 520STFM with 1 meg memory and
drive, stereo sound! and custom extras
SM125 B/W monitor, 2nd drive, 1mg scan-
ner and other software etc £425. Tel 081
868 8028. No time wasters please.

ATARI 810 disk drive, over 100 disks,
including Atari writer WP and Home filling
manager, cartridges, books etc. Sensible
offers please. Phone 081 428 3664 after
7pm.

6807-1 numeric coprocessor 10Mhz suit PC-
XT or Clone £65. Phone evenings (0752)
663538.

SPECTRUM 128K +2, 8 months old with
approx 200 games plus b/w portable TV
£125. Ring (0932) 243518 after 6.30pm.

ATARI 1040 STFM, 40/80 switchable 5 1/4"
drive, green monitor, £700+ software, all
accessories and boxes etc. Phone Sean on
(0925) 51291 ext 384, workhours only £549
ovno.

C64 games for sale from £1.50 to £3.00
please send SAE for list. 431 Packington
Square, Islington, London N7UE.

ATARI 1040 Multiface, mouse, VIP Profes-
sional Superbase, STOS, games under
guarantee, 11 months old, sell for £500 ono.
Tel (0582) 684781 ask for Robin after 4pm.

SEGA Megadrive for sale with Golden Axe,
Ghouls 'n' Ghosts and Tatsujon, works on
any TV VGC. 11 months guarantee £200. Tel
092 575 4175.

The United Amstrad User Group wishes to make it known that it can supply up to 6Mb of free software entirely, utterly and completely free.

That's right, not even the price of the copying. Simply send the group a disk and it will respond with by filling it full of programs.

And there's provision for cassette owners too. If you're a cassette owner who's feeling left out in the cold, then warm to the fact that the UAUG will, upon application, send you a tape stuffed to the gills with goodies. You simply copy the tape then return it intact and you won't incur any charges - can't say fairer than that.

What's that? The group's address? 26 Uplands Crescent, Fareham, Hants PO16 7JY. Telephone 0329 234291.

Oh no! There's another 'small man' library tugging at my typing fingers, just crying out to be in (and if you're not in you're out). Alan Scully produces - alongside Robot PD (details in a coming instalment) - the only entirely cassette-based CPC PD library.

The man Scully has included his CPD-8 Starter Pack cassette to substantiate his outrageous claims. These latter prove to be entirely stantiated and so he gets a mention. Alan Scully, 119 Laurel Drive, Greenhills, East Kilbride,

THE PD COLUMN

There is a lot of software out there available for the price of a disk. Our weekly column by Jerry Glenwright explores the world of the public domain.

Glasgow G7S 9JG. The price? An unbelievable cheap 40p per disk! And so on to this week's column...

AMSTRAD CPC

D-Shell is a quite remarkable friendly front-end for Amstrad CPC owners whose systems are equipped with disk drives.

Normally after buying an Amstrad disk drive, new owners are quickly dismayed by the dreadful Amstrad DOS (Disk Operating System) which accompanies the device.

To rename a file, access a binary file or delete an item, you must type a series of obscure commands from within Amstrad BASIC, whereupon the drive is accessed and DOS is loaded together with whatever command you've chosen to issue. The process is

extremely slow and highly inefficient.

D-Shell overcomes the limitations set by Amstrad DOS by providing an efficient shell to front DOS. When you boot the Amstrad, D-Shell is loaded from disk and hidden away as a tiny fragment of binary code in a protected reset-proof portion of memory. Now when you want to rename, delete or otherwise manipulate files and programs stored on disk, you simply type 'D-Shell' at the BASIC prompt.

A menu appears on screen providing all of the most needed disk and file options. Each command is selected by typing its first letter. If you need to specify parameters such as selecting a particular file, then you're prompted by D-Shell.

Lightning fast operation (due to its being held in memory at all times)

makes D-Shell a really necessary improvement over the existing DOS, and once used, you'll never want to be without it.

ATARI 8-BIT

Several word processors have appeared for the Atari 8-bit over the years, most emanating from the United States, and although one or two have been rather good, they're invariably expensive and never seem to offer all the options you require. And being commercial offerings, there's no way to customise them to your own specifications. But there is an alternative.

Speed Script from Computer! is a word processor with a difference, you type it in! That's right, originally appearing in printed form in the incredibly popular American computer magazine

SENAC SOFTWARE PD LIBRARY

14 Oaklea Close, Old Roar Road,
St Leonards On Sea, East Sussex
TN37 7HB Tel 0424 753070
16 Bit Amiga-Atari official FRP
Productions & Senacware distributors

AMIGA FORMAL DISKS

SEN366 Playboy Slide
SEN367 Sabrina/Sam Fox
SEN189 Games Music Creator
SEN439 Future Composer
SEN364 Compact Disk Player
SEN123 Fantasy Pix 1
SEN222 Ghostwriter
SEN412 Joe Slideshow
SEN212 Soundtrackers
SEN489 Noisetrackers
SEN582 Forgotten Realms
SEN587 Crusaders Audio X
SEN188 Oh Obsolete I
SEN181 Oh Obsolete II
SEN373 8 Channel S/Tracker
SEN527 Ham Workbench
SEN551 Battleforce
SEN287 Placbbier
SEN288 Rentalator/Pacman87
SEN277 Autobahn 3888
SEN418 Risk (1 meg)
SEN553 All New Startrek Disk 1
SEN554 All New Startrek Disk 2
SEN484 C Compiler PD
SEN511 Zerg D/D
SEN586 Diplomacy
SEN183 Rotatingwomen animations
SEN435 Newtek II (1 meg 2 drives)
SEN436 Newtek III Data Disk
SEN513 Paula VI Animations

AMIGA SPECIALS

SPECIAL I Soundtracker collection, six disks
comprise Soundtracker programs and ST-82 Thru
ST-86 ONLY £7.99

SPECIAL II Fantasy Collection, six disks of
Fantasy Art. Brill stuff ONLY £7.99

SPECIAL III Games Collection, six disks of
great PD games including Placbbier, Eatmine,
Zerg, Skyfight, etc ONLY £7.99

SPECIAL IV Programmer's Collection,
six disks for the C Programmer includes C
Compiler, Draco Compiler, Pascal Compiler and
Programmers Tools ONLY £7.99

SPECIAL V Demos Collection which includes
Red Sector two disk set up Demos I and II,
six disks in this set ONLY £7.99

PRICES INCLUSIVE POST AND PACKING

2-9 DISKS £1.75 each
10-25 DISKS . £1.58 each
26 OR MORE £1.25 each

ATARI COLLECTIONS SINGLE SIDED

SENAT1 Accessories Disk
SENAT2 More Accessories
SENAT4 Address Book XDirectory
SENAT6 Secedit, 68000 Assembler
SENAT8 ST-Writer V3.0
SENAT9 Piccys Disk 1
SENAT24 ST-Sheet Spreadsheet
SENAT23 ST Database Good!
SENAT27 Elementary C Tutorial I
SENAT28 Elementary C Tutorial II
SENAT29 Elementary C Tutorial III
SENAT30 C Compiler + Other Utils
SENAT31 Kidgames, Potato Sketch etc
SENAT32 Kidz!!! Song Ground etc
SENAT33 Painting menu only
SENAT35 Uniform Course Program Nice!
SENAT37 Flying Birds Demo
SENAT39 ST Vegas Great Game
SENAT40 Snooker Answer Questions to Pot
SENAT41 Composer requires 1 meg
SENAT43 Jukebox + ST Speech
SENAT56 Neochrome Two versions
SENAT55 Studio & Van Gogh
SENAT58 Snowman Demo (1 meg)
SENAT62 Pipomania Demo
SENAT74 Dragons Lair Demo
SENAT64 DCF format, Wakeicon, etc
SENAT66 Masterpaint
SENAT67 Animals 4 + Cartoon

We are always looking for more disks to add to
our collection. We operate a PD disk swapping
service. If you require a catalogue please! forward
to us a stamped addressed envelope (A5 size)
- for 28p to the address shown above.

EIGHT BIT SURPLUS STUFF!!!

PCW8526 BITS

PCW1 - Communications Disk
PCW2 - Utilities Disk
PCW3 - Database
PCW4 - Spreadsheet

PCW TITLES ARE £3.45 EACH AND
SUPPLIED ON CP-2 DISKETTES

MICRODIAL

MILES GORDON TECHNOLOGY

SAM COUPE £179.00
SAM COUPE + 1 DISK DRIVE £245.00
SAM COUPE + 2 DISK DRIVES £329.00

ATARI

520STFM DISCOVERY PACK £279.00
520STE POWER PACK £369.00
1040STE BUSINESS PACK £460.00
PORTFOLIO £229.00
LYNX £165.00

COMMODORE

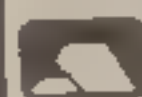
AMIGA A500 BATMAN PACK £369.00
A500 FLIGHT OF FANTASY PACK £369.00
A500 CLASS OF THE '90'S PACK £515.00

PRINTERS

STAR LC-10 £169.00
STAR LC-24/10 £249.00
MANNESMANN TALLY MT81 £147.00
CITIZEN 120D £125.00

MONITORS, SOFTWARE, CABLES AND MORE,
PLEASE PHONE FOR DETAILS.

All prices include VAT and P&P,
Courier Delivery add £6.



Please make cheques, P.O.'s payable to "MICRODIAL" and
send to:

THE OLD CAMP SHOP, WARRINGTON LANE, ADGEN
WHARF, LYMM, WARRINGTON, WA13 0SW.

All items are subject to availability, prices are subject to change
without notice. All goods despatched upon cleared payment.
Proprietors: Mike Todd and Mal Neary. E. & O. E.

24 HOUR ORDER LINE 0925 75 7696

Ladbroke Computing International

ST World
'Best Dealer' 1989



Please Read: Terms Of Sale

All prices are correct at copy date, 23/05/89 and are subject to change without prior notice. All prices are accurate while stocks last. Phone for up to date prices. All prices include VAT. Delivery, in Mainland UK, is free on orders over £100 (add £8 for next day courier delivery).

Phone us, We will try to match any price.

Midistudio Master £129.99

- 100 tracks storage, 20 tracks playing simultaneously.
- 240 ppq resolution.
- Realtime mix-down via mouse, realtime clock.
- Realtime scrolling arrange window.
- 11 levels of quantise, including humanise.
- Pipeline/Module system.
- Loop record.
- Mid soft keys.
- Works on 1040STF(MXE)



Original Midistudio still available at an amazing £49.99

ST & Amiga Memory Upgrades

512K STFM/STM fitted.	£74.99	512K STFM, kit.	£49.99
512K STE SIMM's, SIP's	£49.99	512K ST board+chips, fitted.	£114.99
512K ST board+chips, kit.	£104.99	2Mb ST board+chips, fitted.	£224.99
2Mb ST board+chips, kit.	£199.99	2Mb STE SIMM's, SIP's, Kit.	£174.99
4Mb ST boards+chips, fitted.	£424.99	4Mb STE SIMM's, SIP's, Kit.	£349.99
STFM Blitter chip, fitted.	£49.99	STFM Blitter chip, kit.	£39.99
512K Amiga board (no chips)	£24.99	512K Amiga board+chips	£64.99
512K Amiga board (no chips)+clock	£34.99	512K Amiga board+chips+clock	£74.99

*Please check configuration before ordering. Our Atari trained engineers can repair all hardware, including Amigas, in minimum time at competitive prices. Prices quoted for machines not previously tampered with. All upgrades/repairs carry our 90 days parts and labour guarantee.

A4 Flat Bed Scanner

- 200 Dpi scanner, 16 grey scales or Black/White mode.
- High quality thermal image printer.
- Acts as photocopier.
- Ready to scan in minutes.
- Works with ST, Amiga, PC (£30), requires 1Mb RAM.
- Comes complete with software, cable, thermal paper. No more to buy.
- Thermal paper available ex-stock at £7.99 per roll.

£449.99

IMG scanner still available at an incredible £49.99

Quality 3.5" Disks

Quantity	Unbranded		Sony Branded
	Loose	Boxed	Boxed
10	£6.99	£7.99	£9.99
100	£64.99	£74.99	£89.99

All disks carry an unconditional lifetime guarantee. Please add 80p P&P for each pack of ten disks.

Monitors & TV's

Atari SM124 Mono	£ 109.99
Philips 8833 Colour	£ 249.99
Philips 8801 Colour	£ 219.99
Philips 15" TV	£ 259.99

Includes: FST, remote control, Scart input, 60 tuner presets, sleep timer and Fastext. Monitors come complete with Scart cable, also deduct £10 when bought with computer.

'1040STE' Power

- 520 STE upgraded to 1Mb.
- Atari Joystick.
- 20 Power pack games.
- Organiser, 1st BASIC, 1st Music.

All for Only £399.99

While stocks last



Spectre GCR



"Power of the Mac, without the price."

- * Reads and writes Mac disks.
- * Supports most Macintosh Software.
- * Supports Hard drive and second floppy.
- * Compatible with STE, Stacy.
- * 30% bigger screen area than Mac Plus.
- * Runs 20% faster than Mac Plus.

Spectre GCR
£284.99
with 128K ROM's
£384.99

Cumana ST & Amiga 3.5" Drives

CSA 354: ST 3.5" drive.	£69.99
CAX 354: Amiga 3.5" drive.	£64.99
ST Internal drive upgrade.	£64.99

The Cumana, ST, internal drive requires the ST's case to be modified (full instructions supplied). The external ST drive is slim, quiet and comes complete with integral power supply/data lead. The Amiga drive is slim, quiet and has through port/disable switch. Add £2.50 P&P for drives. ST A/B boot switch, fitted - £24.99.



Hard Drives

We have a range of high quality, ST hard drives at affordable prices. All have a full metal case with push button on/off switch mounted on the front, 80 watt PSU, Autopark mechanism and external, DMA device No. selection. The controller is low power and full SCSI. The software allows up to 14 GEM partitions.

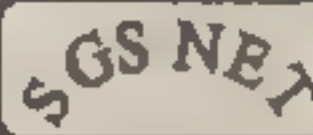
42HD 42Mb, 11Ms	£ 549.99	84HD 84Mb, 24Ms	£ 699.99
48HD/40 48Mb, 40Ms	£ 499.99	111HD 111Mb, 15Ms	£ 829.99
48HD/28 48Mb, 28Ms	£ 524.99	142HD 142Mb, 15Ms	£ 949.99
61HD 61Mb, 24Ms	£ 619.99	177HD 177Mb, 15Ms	£ 1099.99
Vortex 40Mb (Amiga)	£ 499.99	Supra 30Mb	£ 474.99



Best Selling Printers

All dot matrix printers come complete with Centronics cable which is compatible with ST, Amiga, PC. We can supply cables for other makes of computer for an additional charge. All Star printers include 12 months on site warranty, UK Mainland only.

Star LC-10	140/36cps	£ 169.99	Star FR-10	300/76	£ 399.99
Star LC-10 Colour	7 colour	£ 209.99	Star FR-15	15" carriage	£ 499.99
Star LC-10 Mk II	180/45cps	£ 189.99	Star XB-24/10	80cps SLQ	£ 499.99
Star LC-24/10	170/57cps	£ 239.99	Star XB-24/15	15" carriage	£ 649.99
Citizen 120D	120cps	£ 139.99	Star Laser 8	1Mb RAM	£ 2287.99
Citizen Swift	192/64cps	£ 319.99	Atari SLMB04 Laser printer		£ 1099.99
Citizen swift Colour upgrade		£ 39.99	FR/XB range colour upgrade		£ 39.99
64K buffer/3 input switcher		£ 79.99	256K buffer/3 input switcher		£ 149.99



SGSnet ST Networking

- * Network up to 32 ST's, up to 500ft apart.
- * Full data correction.
- * File locking.
- * Networking permissions.
- * Allows up to 12 hard/RAM disk partitions.

Starter kit
£149.99
Add on kit
£99.99

Computer Systems

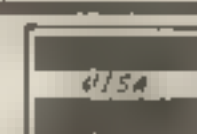
Atari Lynx	£ 189.99	520 STE	£ 369.99
Amiga Batman Pack	£ 369.99	520STFM Discovery	£ 279.99
Mega ST1+Mono	£ 599.99	1Mb upgraded 520STE	£ 429.99
Portfolio pocket PC	£ 224.99	DTP Mega 2 pack	£1874.99

How to Pay
You can purchase card details on phone or send a cheque or postal orders made payable to Ladbroke Computing International.



(0772)203166 Fax 561071

Shop & Mail order premises: 33 Ormakirk Road, Preston, Lancashire, PR1 2QP Open Monday to Saturday 8:00am to 6:00pm. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Walton Marketing Limited. All trade marks recognised.



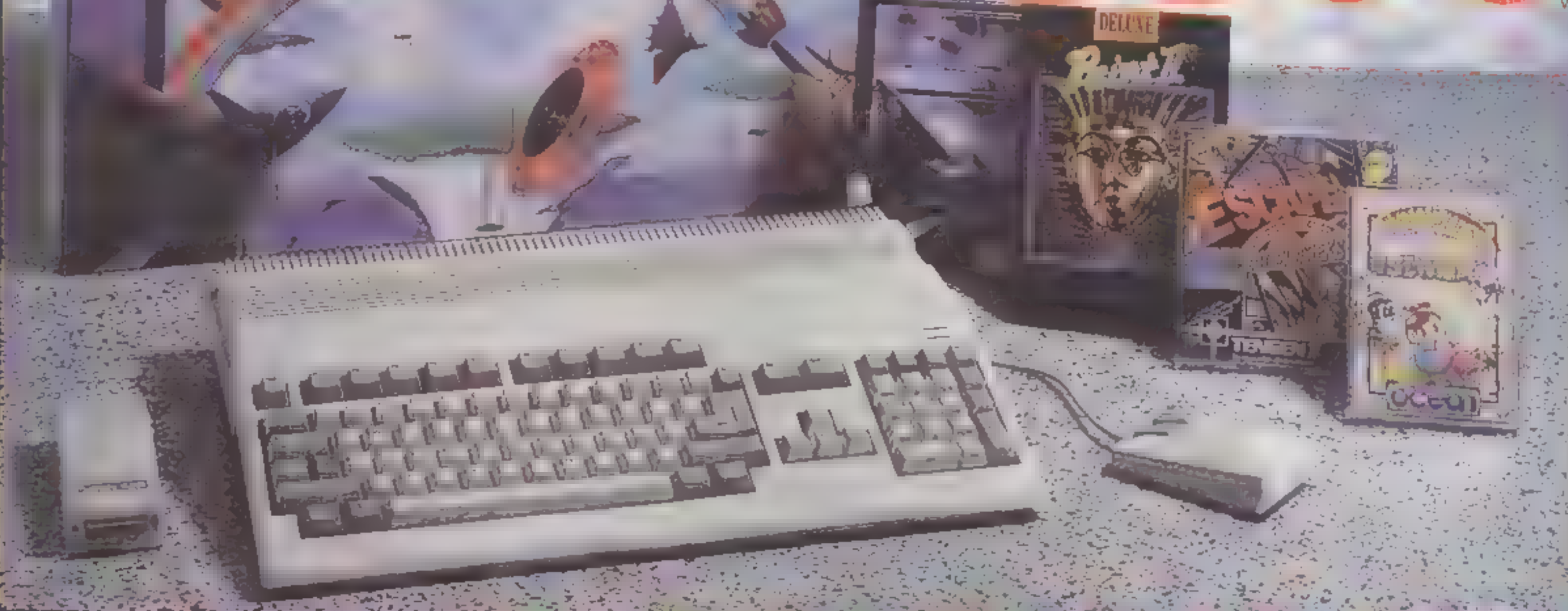
To assist us in processing your order please quote this code:
SS14.5

RETURN THE COUPON FOR FREE COLOUR BROCHURES!

NEW! - AMIGA PACK

Commodore Amiga
Flight Of Fantasy

£399



A500 BATMAN PACK



The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the Commodore Amiga 500 computer with mouse controller and TV modulator, plus four top software titles. The software includes: 'Batman The Movie' - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; 'New Zealand Story' - high quality conversion of the leading arcade game; 'Interceptor' - Dogfight with two F-16's in this leading flight simulator; 'Deluxe Paint II' - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95

TOTAL RRP: £549.78
Less Pack Saving: £150.78

PACK PRICE: £399.00

£399 INC VAT

AMIGA 2000



For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295 + VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

+VAT= £1489.25

FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

DELUXE PAINT II

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

INTERCEPTOR

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

RAINBOW ISLANDS

Slip on your magic shoes, practice throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, slinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

F29 RETALIATOR

The ultimate in flight simulation with a choice of two aircraft and four battle environments with dozens of different tactical missions. Aerial combat, strategic bombings, interactive ground based battles, seagoing carriers - the list of features is endless. Real time cockpit displays, including 'true radar' enhance the realistic feel of this stunning simulation.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Deluxe Paint II	£49.95
Escape/Robot Monsters	£19.99
Rainbow Islands	£24.95
F29 Retaliator	£24.95

TOTAL RRP: £544.82
Less Pack Saving: £145.82

PACK PRICE: £399.00

£399 INC VAT

FOR FURTHER DETAILS OF THE AMIGA RANGE, COMPLETE THE COUPON AND RETURN IT TO SILICA SHOP
THE UK's No1 AMIGA SPECIALISTS

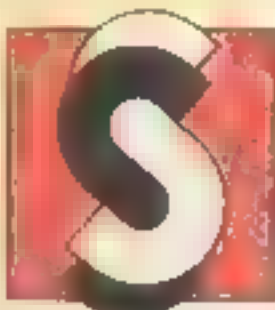
SILICA SHOP OFFER YOU

FREE OVERNIGHT COURIER DELIVERY On all hardware orders shipped in the UK.
TECHNICAL SUPPORT HELPLINE Team of Amiga technical experts at your service.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All of your Amiga requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: By cash, cheque and major credit cards.
CREDIT PAYMENT TERMS: Silica are licensed credit brokers - return coupon for details.

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Shop, we ensure that you will have nothing to worry about. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Shop Service".

RETURN THE COUPON NOW FOR
FREE BROCHURES

**SILICA
SHOP**



MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111
Order Lines Open: Mon-Sat 9:00am-6:00pm No Late Night Opening Fax No: 081-308 0508
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000
Opening Hours: Mon-Sat 9:30am-6:00pm Late Night: Thursday until 8pm Fax No: 071-323 4737
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811
Opening Hours: Mon-Sat 9:00am-6:30pm Late Night: Friday until 7pm Fax No: 081-309 0017
BUSINESS/EDUCATION: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-308 0888
Order Lines Open: Mon-Fri 9:00am-8:00pm Closed on Saturdays Fax No: 081-308 0608

To: Silica Systems Ltd, Dept NCE-0590-32, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON THE AMIGA

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode: Tel:

Which computer(s), if any, do you own? A2000 ☐

£60b - Advertised prices and specifications may change - please return the coupon for the latest information

Three-dimensional computing was born in 1981. Before then, even the most massive of mainframes only handled 2D drafting. It took a revolution spurred by Silicon Graphics to present designers with opportunities to smoothly simulate solid or surface images in real-time.

This was essential in so far as engineers and manufacturers required cost-effective means of translating 2D plans directly into 3D prototype modelling instructions. It took three years for the first products to ship, but only another three before the company could claim to be the world leader. Nowadays, Silicon Graphics Iris workstations, starting out at £25,000, dominate every area of sophisticated 3D visualisation – whether it be cars, TV adverts or robots.

Its latest beast, the Power 4D-200 uses eight RISC chips delivering a claimed 33 megaFLOPS (million floating point operations per second, an Amiga manages about a hundredth of that); enough performance to handle more than one million polygons per second. This sort of power means that engineers and designers can, for the first time, manipulate full-rendered objects in real-time.

As it can also display images with up to 268 bits (roughly 5×10^{10} colours) per pixel you won't be surprised that it costs \$100,000 – but then Silicon Graphics would argue that's a tenth of the price of competing systems from Cray and IBM. So how do you go about harnessing that raw power?

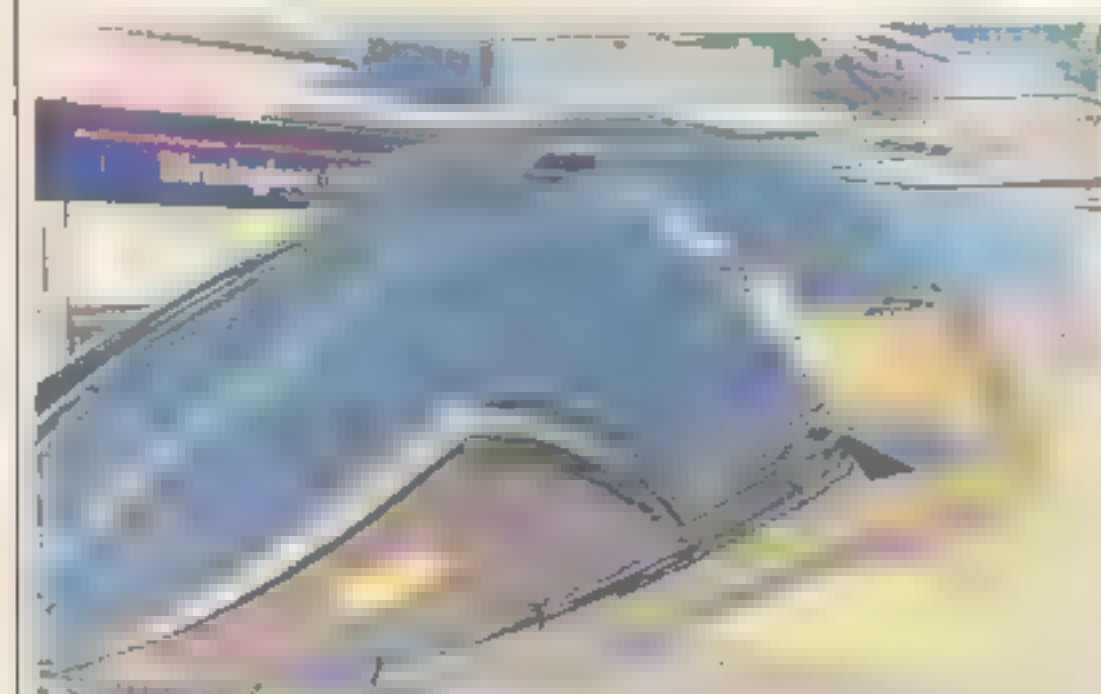
AT THE 3D HEART

A 3D graphics workstation produces smooth, solid, animated objects by keeping a database of the co-ordinates of the graphic components and their relationships to each other. This takes huge amounts of computation – the latest machines use up to eight CPUs simultaneously and process data at rates of up to 1.35 billion bits each second! But how do you convert the sketchy dreams of designers into the primitive streams of binary a computer requires?

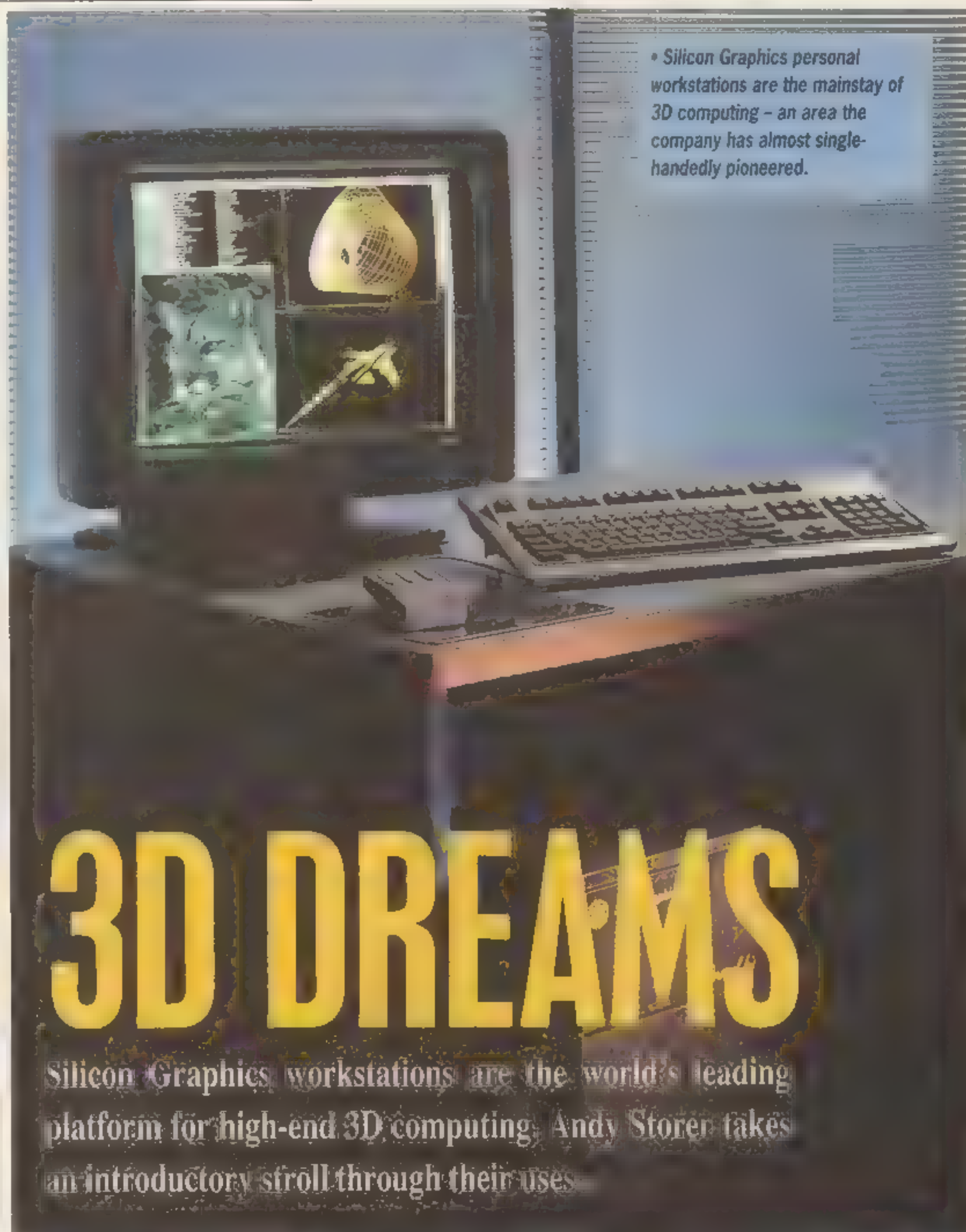
After a project brief is established, visual ideas can be entered directly into the workstation using a graphics tablet and light pen. More often than not though, the visual ideas come in the form of artwork and models produced by artists. 2D artwork is placed on a digitising tablet and the outlines traced using an electronic stylus, and 3D objects can also be traced using sophisticated 3D digitisers from companies like Cyberware.

DIGITISED DATA

Other material such as live action or hand animation is frame grabbed, while computer generated effects, such as landscapes, clouds and water, can be created using complex fractal maths. The digitised data is first reproduced in wire-frame form, allowing images to be manipulated at 25 frames per second – real-time – thus making the process fully interactive. Motion rates, point



• With 'environment mapping' it's possible to create a convincing illusion of fully reflective surfaces like mirrors, chrome, ceramics and precious metals – other material qualities such as transparency and translucency can also be rendered.



• Silicon Graphics personal workstations are the mainstay of 3D computing – an area the company has almost single-handedly pioneered.

3D DREAMS

Silicon Graphics workstations are the world's leading platform for high-end 3D computing. Andy Storer takes an introductory stroll through their uses.

view and light placement can be manipulated using a sophisticated modelling language. Animated sequences are constructed using the traditional key-frame process whereby all the in-between frames of a movement are automatically worked up by the software.

SAMPLE RENDERING

A selection of single frame images are fully rendered in order to give an early impression of colour and lighting. The rendering system can produce the standard 'face shading' of simulating flat matt surfaces and 'phong shading' – a method for representing shiny smooth surfaced objects – but there are a host of other features available.

'Texture mapping' allows any 2D colour image from any source to be warped and pasted onto the surface of an object, while 'bump mapping' is used to simulate tactile qualities such as wrinkled or rough surfaces like granite or embossed paper.

In addition to simulating natural light sources, the software can provide a wide variety of artificial illumination effects, including variable beam spotlights, lamps of different colour and brightness, and glow effects. Combine these with the ability to produce varying shadows, soft rendering and selective ray tracing, and you have a graphics manipulation system where the only limit is imagination.

Finally, all frames in an animation are fully-rendered and light-sourced and the sequence is ready for presentation. ■

CYBERWARE

Besides requiring 3D digitisers to scan objects into the graphics workstation for manipulation, manufacturers are also likely to want real solid 3D output too – actual models they can hold. One company which can deliver both is Californian-based Cyberware. It claims its 3D Digitiser can scan the shape, colour and texture of a complex 3D object in less than 15 seconds for display on screen as a detailed, full-colour 3D model. Once the position the model can be altered at will and the results sent to a milling machine for rapid prototyping. So, for instance, an engineer could evaluate a new aerodynamic surface in a wind tunnel, modify it on a workstation, then mill a new prototype – all in a matter of hours. More info on 010 1 408 373 1441.

THE OUTER LIMITS

ASA is right at the cutting edge of 3D computing. It used Silicon Graphics and Cray computers in the design of the space shuttle to handle its thermal dynamics. As much as 32Mb of data would need to be computed for one second of flight time – the human equivalent of assimilating a numerical report some 11 feet high. A Cray X/MP handled the number-crunching and downloaded the data to an Iris workstation to provide the 3D visualisations.

★ POCKET SIZED ★ PC-COMPATIBLE ★ PERSONAL ORGANISER ★



ATARI Portfolio

THE PC IN YOUR POCKET

The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80x25 character display.

Portfolio includes everything you would expect from an electronic organiser - an address and telephone book, time manager, diary and sophisticated calculator.

Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

FOR ONLY **£249** INC VAT

SPECIFICATION

- **Processor:** Intel 80C88 @ 4.9152Mhz.
- **Operating System:** Compatible with MS-DOS 2.11.
- **Internal ROM:** 256K containing BIOS, operating system and applications suite.
- **RAM:** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 840K RAM.
- **Keyboard:** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- **Character Set:** Extended IBM ASCII (255 characters).
- **Mass storage:** credit card sized memory cards (32K or 64K or 128K RAM).
- **Display:** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 25 lines, 240 x 64 pixels (with the option of a window of full 80 x 25 character display). Keyboard controlled contrast.
- **Peripherals:** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- **Size:** 8" x 4" x 1" (200mm x 105mm x 29mm).
- **Weight:** 495 grammes (with batteries).
- **Applications:** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

5 BUILT-IN APPLICATIONS! TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial,

power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, with the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program

includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serialcentronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built-in modem, Apple Macintosh Interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.



MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.



INTERFACES & PERIPHERALS

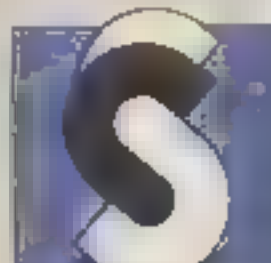
Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

SILICA SYSTEMS OFFER YOU

FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
TECHNICAL SUPPORT HELPLINE: Team of Atari technical experts at your service.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All of your Atari PC requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: By cash, cheque and all major credit cards.
CREDIT PAYMENT TERMS: Silica are licensed credit brokers - details on request.

Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, with the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

**SILICA
SYSTEMS**



MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111
 Order Lines Open: Mon-Sat 9:00am-6:00pm No Late Night Opening Fax No: 081-308 0608
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000
 Opening Hours: Mon-Sat 9:30am-6:00pm Late Night Thursday until 8pm Fax No: 071-323 4737
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811
 Opening Hours: Mon-Sat 9:00am-5:30pm Late Night Friday until 7pm Fax No: 081-308 0017
BUSINESS/EDUCATION: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-308 0888
 Order Lines Open: Mon-Fri 9:00am-6:00pm Closed on Saturdays Fax No: 081-308 0608

To: Silica Systems Ltd, Dept NCE-0590-29, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON PORTFOLIO

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Tel (Home): Tel (Work):

Company Name:

Which computer(s), if any, do you own?

© 1988 Advertiser prices and specifications may change - please return the coupon for the latest information

GEO GRAPHICS



•Neo Geo: the 'home arcade' game everyone's waiting for

It's the fastest, loudest, and most expensive console ever. It's the Neo-Geo, and Tony Takoushi can't take his hands off it...

The Neo-Geo from SNK represents something of a quantum leap in the world of home video consoles. The new machine is simply miles ahead of the competition in terms of its hardware, software and, inevitably, its price.

SNK has a strong background in arcade shoot-'em-ups, with *Time Soldiers*, *Ikari Warriors* and *Contra* to its credit, to name but three. It is this expertise – not least the hardware technology – which the company has repackaged for the home in the shape of the Neo-Geo.

INSIDE

At the heart of the system is a Motorola 68000 processor running at 12MHz – that's 50 per cent faster than its working speed in either the ST or Amiga. A Z80A co-processor (which is a whole CPC or Spectrum's worth) runs at 4MHz to control the sound.

The machine boasts 64K of RAM, 68K video RAM and 64K of ROM. There is a palette of 65,535 colours with up to 4,096 on screen at once. SNK has developed its own custom, large scale integration, video display processor and has built in hardware sprites and hardware scrolling.

Sound comes from three programmable sound generators, four FM channels, one noise channel and seven pulse code modulation channels. This is a formidable sound line-up, which becomes evident during play – digitised sound is littered throughout the game and music beats away wildly without any need to slow up for the on-screen action.

OUTSIDE

The beast itself is a sleek black plastic 30cm by 25cm rectangle 5cm deep. Two 15-pin D-shaped joystick ports share the front surface with on/off and volume sliders, headphone socket and memory card port (see below). Games cartridges fit into a large slot on top of the machine and measure 19cm x 12cm x 3cm. Each cartridge contains two boards (which probably accounts for the enormous 46Mb capacity) and fitting one snugly into the console can be unnerving.

To the rear are ports for audio and video out, and the absence of any expansion ports or buses suggests that SNK has no plans beyond pitching the Neo-Geo firmly at the arcade-playing market.

The joy pad has certainly not been skimmed on – it measures 28cm x 18cm x 4cm, which is not far off the size of the console itself. It sits comfortably in the lap, and both the joystick and buttons have a good, solid throw and play smoothly.

£120 A GAME

The new console was released in Japan during April at a retail price of 58,000 yen (around £260). Titles already out include *Mah Jong*, *Magician Lord*, *NAM-1975*, *Baseball Stars* and *Top Players Golf*. Each game costs 28,000 yen, a staggering £120 to you and me.

As is evident, the Neo-Geo is not the cheapest of consoles in itself, and its software comes in with a price tag around four times higher than that on a typical

Megadrive/Master System cartridge. But can this huge outlay conceivably be justified by the quality of the games on offer?

If all of the software matches the standards of *Magician Lord*, which came with the machine, then on balance the short answer is yes. This is a game that has everything an arcade fan could possibly want from an adventure (see the review on this page), but you would still have to be a very big fan to part with this kind of money for one game.

As far as the man in the street is concerned there is limited potential demand for such expensive software. So it is worth looking just where the Neo-Geo is going to find its niche in the market.

HOME ARCADE

The likeliest possibility, believe it or not, is that it will be mainly a machine to be hired out for a few days at a time, with only the most fanatical (and rich) games players actually buying one.

This is very much the pitch in Japan, where taking

out the Home Rental System (as it is labelled there) is regarded as hiring an arcade machine for the weekend. But the idea of the Neo-Geo effectively being an arcade machine in a smaller box is far from fanciful. The same games will run on both systems, and a unique feature is the ability to save your game position from the console and resume the game in an arcade machine or vice versa.

This is done via a 2K smart card, included in the console package, which can be inserted into a slot in the new generation of SNK arcade machines. The first coin-op to feature this is *NAM-1975* which arrived in the UK during May, so SNK can certainly not be accused of dragging its heels on making sure the technology is in place for the console's launch.

The Neo-Geo will receive a limited release during the last quarter of the year and is officially on display at the EMAP September show both on the Degaulle Marketing stand and in a special exhibit called The Living Room of the Future.

PLAYING THE GAME – MAGICIAN LORD



Boot up the console and there's a fair bit of rigmarole before the game gets under way: Neo-Geo logo, copyright screen, title screen, attract mode with high score table, option to start from a position saved to memory card, split-screen tutorial, and at last...

But not yet! Next a transformation screen for powering up your choice from Shinobi, Dragon Warrior, Waterman, Poseidon Samurai and Raijin superbeings with their different weapons and special characteristics.

At last, the game. The first impression is of something very special going on. The graphics are stunningly detailed and coloured (100-plus colours) and there are three levels of full-screen, pixel-smooth scroll.

There's a pulse-racing background rock track with digitised oomphs, slashes and other sound effects to match the action and scenery as you climb around scaffolding, avoiding bullets and nasties.

The aliens certainly look vicious enough. Some have extended, ripping claws; others include blobby oysters that lob painfully slow floating bombs and ghost-like gods that pop out of holes. But the worst are hovering angels that fire homing

bombs – these are very bad news indeed.

Fighting back means leaping and firing in all directions and if your character captures a transformation ball it metamorphoses into a Dragon Warrior breathing clouds of fire – gorgeous!

Other interesting features include funky, walking zombies and a gloriously cascading waterfall.

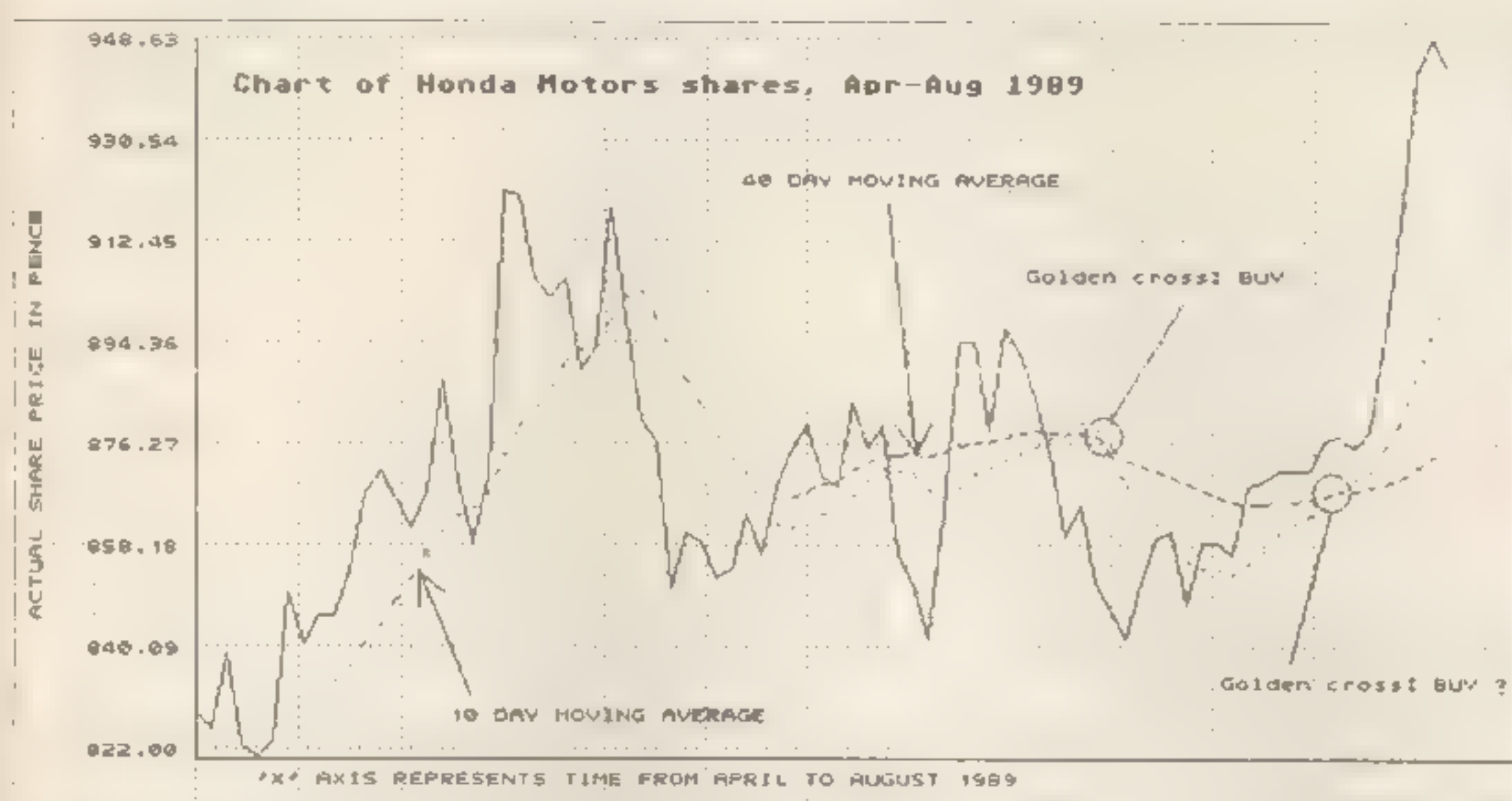
Eventually there is a cast iron door in a clifftop which opens with a satisfyingly eerie creak. Once underground characters can pick up jewels and health power-ups. There is a Shinobi capsule which adds twirling fireballs on the way to the level one antechamber, where the shield guardian has to be beaten before taking on the boss.

There's a brief interlude before being led into the boss' chamber where spikes (and superb graphics) fall from above and a face at the far end crumbles away to reveal a shell. This houses the vital organs of the adversary which have to be blasted to bits while avoiding its flame attacks.

Success means level two! Here, the graphics get better, the tunes wilder and the depth and action heavier. SNK games provide arcade-quality graphics, sound and depth of play. And there are six levels to go...



Stock Market share analysis has come to the ST with ProShare-ST. Chris McCowan speculates on the potential profits to be gained...



• ProShare's graphical displays make the changes in share values instantly obvious.

The era of high-risk, quick-turnover dealings of stripy-shirted youngsters has largely given way these days to the middle-of-the-road investor looking for an interesting hobby with financial rewards, and the serious investor with sizeable assets looking to secure the future.

The number of ordinary people who use the Stock Market is growing significantly and, with more than 7,000 stocks and shares listed on the Stock Exchange at a total value of £1,250 billion, an ST share management package is long overdue.

ProShare-ST aims to make problems with stock market dealing and monitoring a thing of the past. It consists of two parts, the Portfolio and History files – the two fundamental requirements for any investor. The first enables you to record up to 2,500 buying or selling transactions in any one file; the second keeps a day-to-day record of prices.

KEEPING TRACK

The Portfolio files provide you with simple dialogue boxes for you to edit and update your list of stocks. There is the facility to add extra payments, such as dividends, and a sophisticated search and select option based on quantities, profit margins and dates of purchase. You can sort or rearrange your transactions either manually or automatically. A criticism here is that it would be useful for the file to have kept a note of the quantity and value of shares remaining for those who wish to sell half their holdings when they reach the desired minimum profit margin.

The History files enable you to collate the complete list of FT indices. You also have the option to create a file, just selecting those companies you wish to monitor. Copies of *The FT*, *Telegraph* or access to teletext (Ceefax, Prestel or Oracle) is all you need. You can have up to 50 companies in each file if you have a 520ST, 100 if you have a 1040, and up to 365 prices per company, if you are fortunate enough to hire a slave for your daily updates!

This list of daily prices may be viewed through a sub-window opened through the History menu, or simply by double-clicking the mouse on the name of the company whose prices you wish to view. You can open five sub-windows at any one time. Altering and amending prices is simplified with a dialogue box offering choices of Value, Date, Rise and Fall.

Whichever publication you decide to subscribe to it is vital that you enter the company names in an identical order to avoid confusion. The sorting function in the

History menu enables you to make sure you are conforming, should your list have inadvertently become misaligned.

RISE AND FALL

Part of the fascination of owning shares is to watch how they move and follow their rises and falls. Because individual shares do not move in isolation, it is useful to keep an eye on what the market is doing as a whole, so you can take action if you notice any sharp fluctuations in your holdings. The FT/SE100, or Fotsie for short, is the most useful gauge – if your shares are bucking the trend then something is wrong. ProShare-ST enables you to monitor the performance of your shares at a glance through price lists and charts, and to make comparisons with similar companies.

The Chart and Graph facility is the most useful and addictive part of the program, especially if you prefer visually presented data, and can compare up to five companies at one time. There is a wide range of editing features available: colour changing, re-scaling, choice of background grids, type of graph format – bar and line, pie, stacked bar – even the option to show points and annotate the graph.

Plotting a point and figure chart enables you to see at a glance when your shares move. You can set up a designated profit margin in advance so that, if they do move beyond that point, you know it's time to sell!

Select the 'Show information' option and ProShare will automatically chart each individual company on your list for you, together with the current, minimum and maximum prices. Plotting moving averages is yet another task made simple and ProShare also allows you to 'export' relevant data to other programs, incorporating your portfolio into a yearly balance sheet, or showing past performances of investments on a spreadsheet.

Rather like the 22 programs offered on washing machines, you find yourself using only a small percentage of

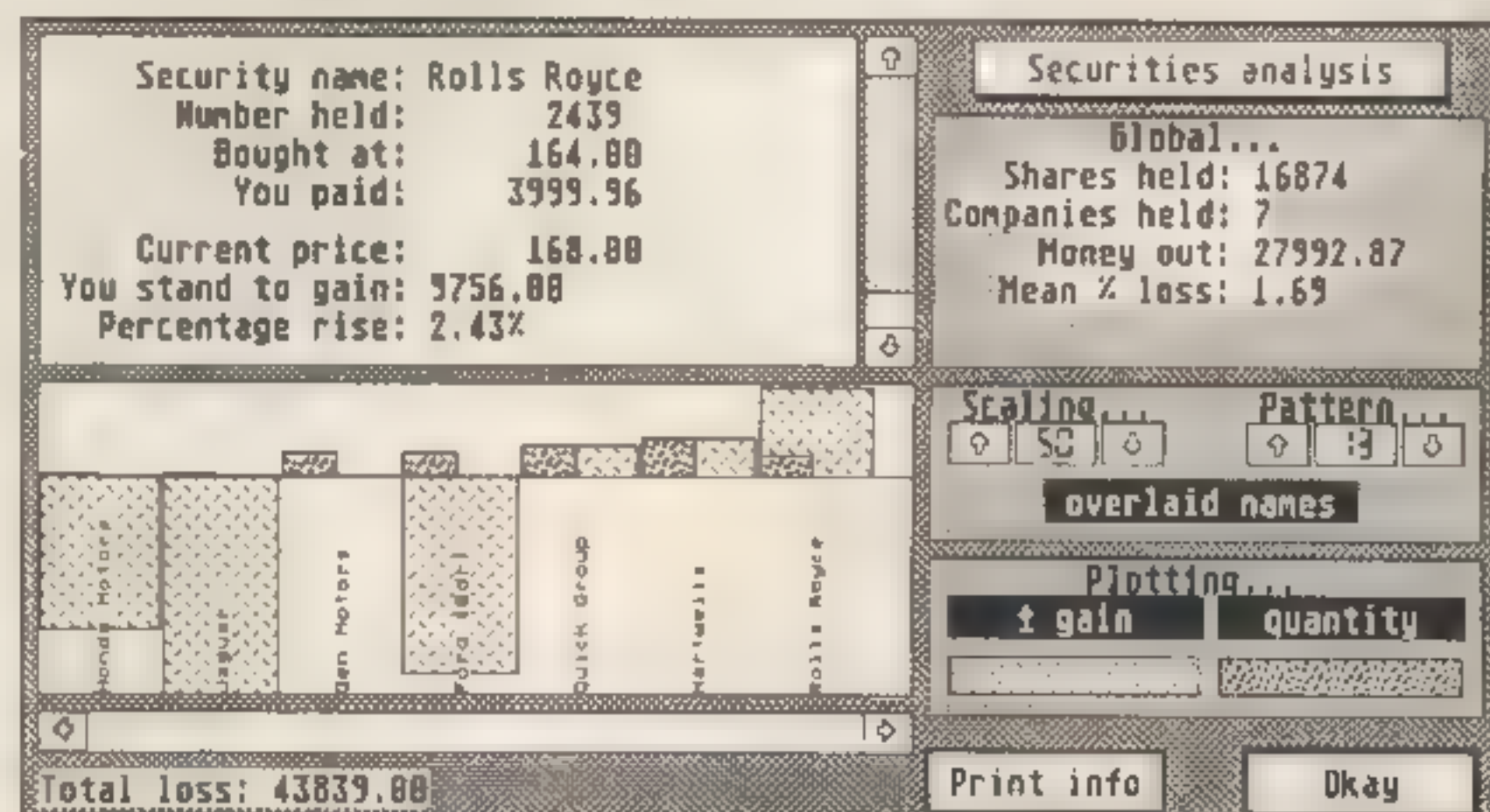
SHARE AND SHARE ALIKE

the features. However ProShare is certainly geared up for use by the small investor who simply wants to organise their small portfolio, the small client-investment manager who would make use of the very comprehensive options available, or the small stock broker who wants to computerise his or her business cheaply.

But there's one area where ProShare-ST really can score. It is perfect for the legions of small groups which meet regularly to invest small sums on the Market. It can provide an ideal monitoring medium with facilities to print out information for all members – and should add a new dimension to the otherwise onerous task of group treasurer.

At just under £50, TC Developments has certainly aimed to give maximum value and flexibility in this neat and tidy package. ■

ProShare-ST is available from TC Developments on 0937 61145 at £49.95. It runs on all STs, but a mono monitor is preferable.



• Instant updates on your portfolio let you keep track of your investments.

UK HOME COMPUTERS

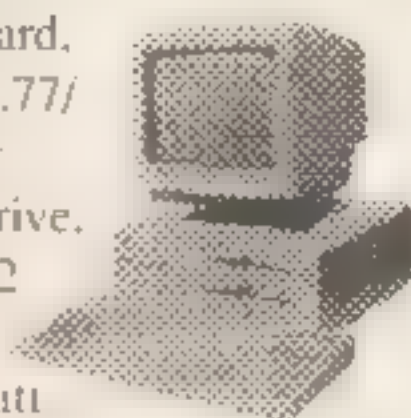
AMSTRAD PPC640S

We have a small quantity of AMSTRAD PPC 640 Single Drive Laptop Computers. 640k memory, built-in modem, Mains adaptor, & cigar lighter fitment. Built for the European market, but fully UK specified. Don't miss this once-only offer at our incredibly low price. Complete with DOS & available Ex-Stock.

OUR PRICE £399.95p Fully Inc.

SAMSUNG PC/XT

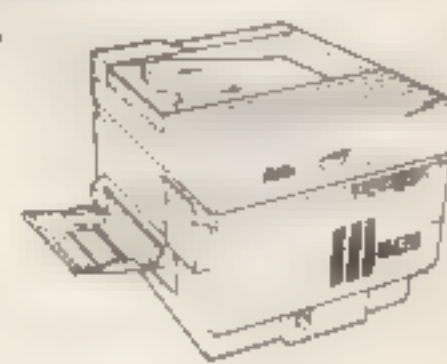
640K RAM. Full-Size keyboard. MS-DOS 3.2. GW-BASIC. 4.77/10MHz Clock Speed. Battery Back-Up. Single 360k disk drive. Hercules display Card. RS232 & Parallel Ports. 8087 Co-Processor socket. 90 Watt switched Power Supply. Small Foot Print. 4 Empty Expansion Slots. 1 Empty Disk Drive Slot.



Single Drive	£459.95p	
S/D with 20Mb. H/D	£689.95p	Carriage
12" Green Monito	£49.95p	£14.00p
14" CGA Monitor	£169.95p	

CITIZEN LASER OVERTURE 110+

At last! an affordable laser printer. 512k memory, Epson, IBM, Diablo compatible. 10 pages per min. Parallel & Serial I/F. 300x300 dots per inch. Landscape or portrait printing. 12 Months on-site warranty. Send for further details, or order TODAY!



OUR PRICE £804.95p
Including VAT, Carriage & Warranty

20 Mb TAPESTREAMER

Now you can afford to back-up your Hard-Disk, and eliminate the risk of losing valuable data. Made by SYSGEN, this unit fits internally into a disk drive slot. Full instructions are supplied, together with software. Originally sold at £477.00p. Suitable for all PC's and clones. Send now for further details and specifications.

OUR PRICE £109.95p
Postage & Packing £4.05p.

PC NETWORKS

Manufactured by AST, we have on offer ASTORUS NETWORK PACKS & SOFTWARE, and ASTORUS NODE COMPLETE NETWORK SOLUTION. Send now for details of our limited network stocks & full details. We also have a small quantity of TAPESTRY Software.

OUR PRICE £149.95p

Postage & Packing £5.05p.
Send now for full details of this and all of our networking offers.

SINCLAIR Q.L.

Fast 68008 CPU 128K RAM. Twin fast-access Microdrives.

Complete with all manuals, cables, PSU, and software (Wordprocessor, Database, Spreadsheet, & Graphics.)



JM ROM £99.95p

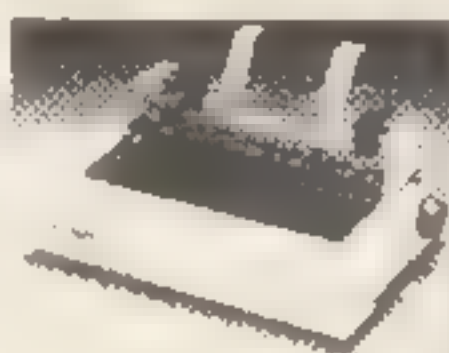
JS ROM £119.95p

Postage & Packing £4.05p.

DISCOUNT PRINTERS

CITIZEN LSP 100

150 cps. 30 NLQ. Friction & Tractor. EPSON & IBM Compatible. Front Panel Control. Parallel Interface. Small foot print. 80 columns. 9 Pin Dot Matrix.



recommended price £249.95p
OUR PRICE £119.95p

Postage & Packing £5.05p

PC AT/XT KEYBOARDS

Top-Quality 101 key-keyboards made by ZENITH DATA SYSTEMS. Standard AT layout, and switchable between PC/XT & PC/AT. Don't put up with your inferior keyboard any longer, at our price you can afford to upgrade NOW! Standard 5-Pin DIN Connection makes this keyboard compatible with almost all IBM's and clones. Stocks are very limited so send today!

OUR PRICE £39.95p inc. Post

DAISYWHEELS

Brother Daisywheel Printers at half price. The HR20 (Usually £450.00p) & the Brother HR40 with a single sheet feeder (Usually £800.00p) at our incredibly low prices. Send today for the full specification details and compare our prices below. These printers are top-of-the-range workhorses and represent tremendous value.

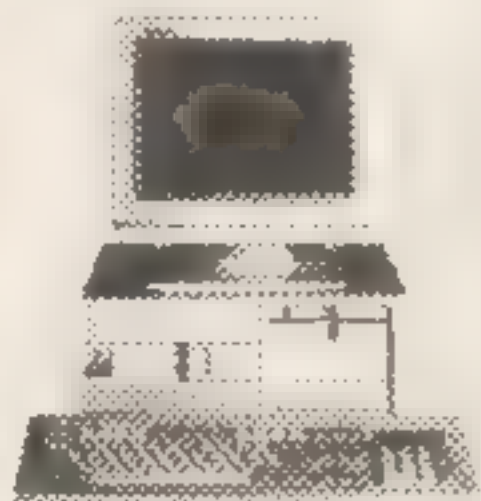
HR20 £275.00p

HR40 £349.95p

Inc. VAT & Postage (Overnight carrier add £5.00p)

SAMSUNG 6000/1 PC/AT

A top-branded PC/AT at an XT price. 80286 Processor with a 6/10 MHz speed. 1Mb RAM, 6 expansion slots, 1.2 Mb 5.25" floppy, 102 key keyboard, battery back-up, Hercules/Monochrome Video Card, RS232 & Parallel Ports, MS-DOS 3.2 & GW-Basic.



£699.95p
inc. VAT & Carriage

SEND FOR DETAILS

Our all-in price of £699.95p includes the Brand New Samsung, an Ex-Display Mono Monitor, & O/N Delivery.

BARGAIN BASEMENT-TO CLEAR

STAR NB-15 FONT ROMS	£19.95
EUROPA PC SECURITY LOCK	£9.95
PC MEMORY BOARDS (unpopulated)	£9.95
PS2 512K MEMORY CARDS	£49.95
TAPESTREAMER CARTS. DC300XLP	£10.00
COMMODORE C64 MUSIC SYSTEM	£29.95
IBM PC CONVERTIBLE LAPTOP	£349.95
ZENITH EAZY-PC MEMORY MODULE	£33.00
EPSON LCD SCREENS (for laptops)	£49.95
RIBBONS-LC10/LQ800/NEC (4 pack)	£12.00

We have numerous PC items to clear. Send now for our full list.
Phone for availability and postage charges for the above items.



VISA/ACCESS orders welcome. Prices subject to change without notice. All transactions are subject to our standard conditions of Sale, available upon request. Personal callers welcome by appointment. All prices include VAT. All goods Brand New unless expressly stated otherwise

VISA

UK HOME COMPUTERS

82 CHURCHWARD AVENUE,
SWINDON, WILTS. SN2 1NH.
0793 695034

The IBM PC is a fiddler's paradise. Everything, from the basic hardware design to the range of memory-resident utilities, offers endless scope, and it's perfectly possible to tinker with a PC for days on end and not actually get any useful work done.

With this in mind, there have been several attempts to put together a set of utility programs which will let the PC user configure and optimise their machine easily, so that they can get the most out of it.

PC Tools is one such suite, and it is the most comprehensive on the market – simply listing its features would easily fill the rest of this review. Suffice it to say that just about every hard disk based operation you can imagine can be done with PC Tools.

SHELLING OUT

The central part of PC Tools is the DOS Shell. This is a program which avoids the user ever having to come across the DOS C: /> prompt. The screen displays a list of the directories on the disk and the files they contain. As you might expect, files can be copied, deleted and moved just by pointing at them and selecting the appropriate option from a menu. PC Tools is menu based, and can be navigated either with a mouse or the keyboard; function key shortcuts are available for those who find an intuitive interface is too easy.

As well as the usual file manipulation commands, files can be viewed directly from the Shell. PC Tools automatically converts most file formats into one you can read, including WordStar and 1-2-3 files and compressed PKZip archives. Even graphics can be viewed.

A Locate option lets you find any file on the hard disk, and you can search for the contents of a file, not just its name. Once you have found the file you want, you can launch the relevant application and load the file with a single keystroke, à la Macintosh.

Those who like a tidy disk can move whole directories with ease, and even sort the entries into whatever order they prefer.

A user-definable applications menu allows you to run any program you like without having to find it on the disk. The Shell can be configured like this by an experienced operator so that those less familiar with the machine can get to grips with it easily. To make it even easier there are three modes of operation; Beginner, Intermediate, and Advanced, with the simpler options hiding many of the more technical menu options from the user.

PC Tools includes a couple of programs designed to improve the performance of your PC.

PC Cache is a RAM disk cache which keeps the most recently accessed data from your hard drive in much faster RAM. It also tries to anticipate which files you will need and reads them into RAM in preparation.

PC Cache is far from unique, but it does offer a degree of flexibility in its configuration that rival programs do not. PC Cache increased the Norton disk performance index of my PC from 1.7 to 6.4 (where an XT is 1).

More significant is Compress, a disk optimiser. Compress rearranges your hard drive, putting the commonly accessed programs together, unfragmenting large files, and shuffling files around to give the

maximum amount of contiguous free space.

The most immediately noticeable effect of Compress is that a previously rattly hard drive becomes virtually silent as the heads no longer have to career over the

disk looking for widely separated segments of file. Large programs such as PageMaker also load noticeably faster.

It is probably worth the cost buying PC Tools just for Compress on its own.

THE TOOLS TO DO THE JOB

It's easy to clutter up your PC's hard disk with dozens of handy utilities for disk maintenance and the like. Stuart Anderton investigates a package which combines them all into one...



• PC Tools' Shell gives you complete control over the PC, and can be customised to suit the individual.

DESKTOP DESIGN

To complement the Shell, PC Tools offers a set of accessories combined together into the Desktop.

The Notepad is quite powerful enough to serve as a reasonable word processor – it even offers a spelling checker.

There is a dBase-compatible database with mail merge facilities, an appointments scheduler, comms

software with fax support, and a set of calculators with financial and scientific functions.

You can cut and paste data between all these applications, but the best feature is that the whole lot will stay memory resident so you can call them up with a hot key at any time. The memory overhead for doing this is surprisingly low – only 40K or so of RAM is used. Another 10K will keep the Shell in memory too.

BACKING UP

No one who has ever backed up a hard disk using MS-DOS's BACKUP command will volunteer for the task again, it is slow, clumsy and awkward. PC Tools offers a special program which minimises the time involved.

The backup program, which is menu based, allows you to pick which files you want to back up by directory, date, file extension or just by selecting them with the mouse. It then gives you the option of compressing the files to save disk space and uses fast DMA access to speed up the backup. DMA (direct memory access) allows the program to read the hard disk and write to the floppy at the same time.

The backup program is very secure. I have had a lot of problems with backups using commercial software, which I eventually tracked down to a clash with Quarterdeck's QEMM 386 memory manager. PC Tools tested my system and found it could not use the fastest backup methods; other software I have used did not detect the clash and merrily lost months of data files.

PC Tools takes around ten minutes to back up my 30Mb hard disk.

IN CASE OF DISASTER

Perhaps PC Tools' biggest strength is its disk data recovery option. It can undelete files, find lost directories, revitalise old floppies and even unformat disks! The whole process is automated and, although you are kept informed of corrupted FATs and lost clusters, you don't need to know anything technical to recover vital data.

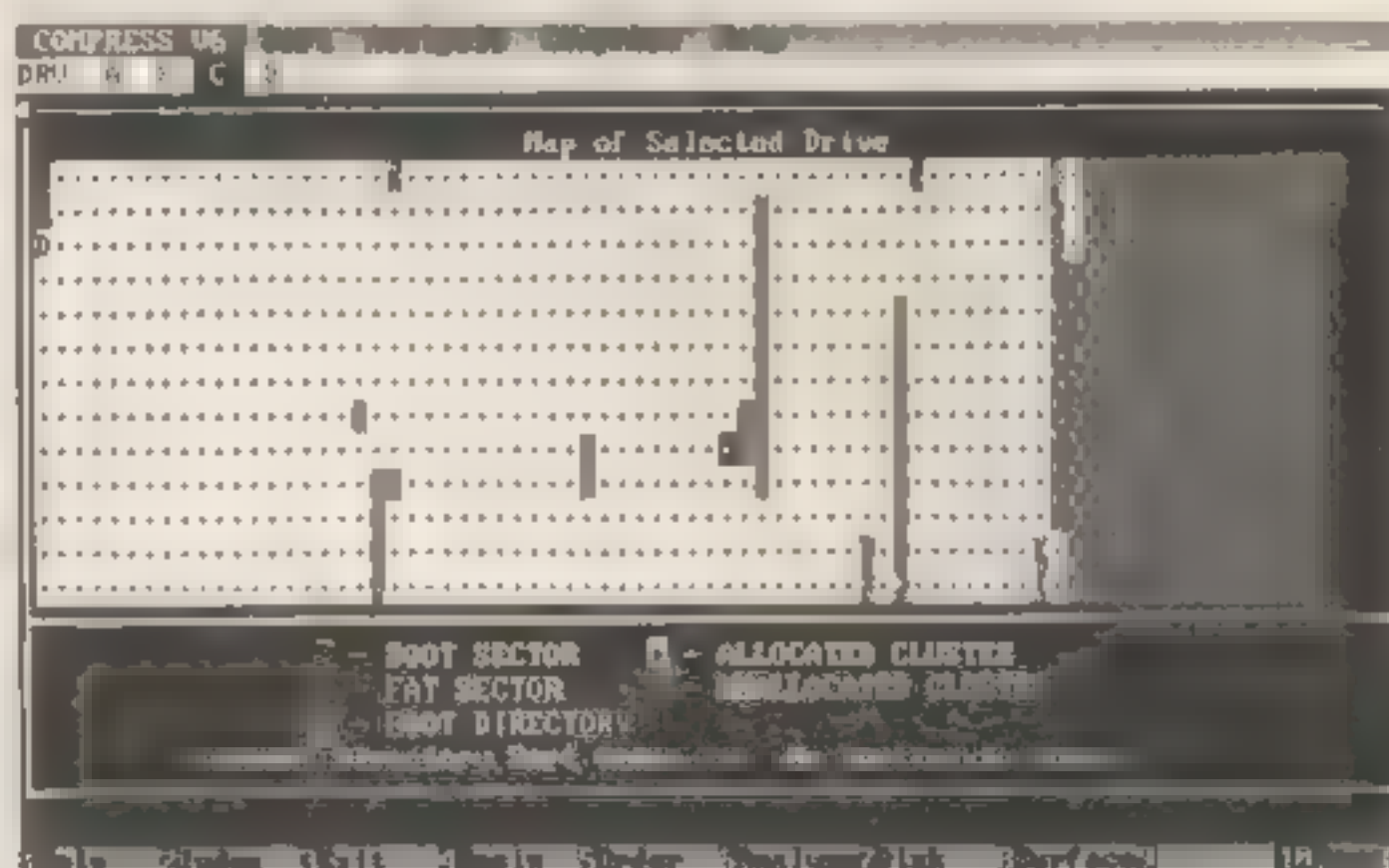
CONCLUSION

Since installing the review copy of PC Tools onto my PC, it has easily been the most used, and most useful, piece of software on the machine. I would not be without it, and find it easier to use than other similar packages such as Norton Utilities.

A PC without PC Tools is simply not running as efficiently as it could. ■

PC Tools Deluxe is published by Central Point Software and is available for £91 from Software Paradise on (0222) 887521.

TOP PERFORMANCE



• One Future Publishing hard disk which could do with optimising.

Going on line is the art of attaching your computer to the phone system and communicating with the outside world.

That can mean simply connecting to another computer to swap files, say at the office. Alternatively you can send electronic mail via an on-line mailbox system such as Telecom Gold or Cix. Or you can access one of the many information services such as Prestel or CompuServe, which provide access to huge databases – CompuServe has a complete on-line encyclopaedia – and even teleshopping facilities. Or you can join one of the hundreds of hobbyist bulletin boards, where you can leave messages in chatlines and download public domain software.

Comms is one of the most fascinating parts of computing, as any enthusiast will tell you. There is a lot of stuff out there to be discovered, and that's what it is about – exploring the telecommunications network.

The first thing that you'll need to know is what equipment you need, but listen to two comms enthusiasts talking and they may as well be speaking Lithuanian with their Hayes protocols, V22bis, AT codes and the rest.

VITAL PARTS

The first requirement is a modem – that's the device which translates digital data into sounds that can be sent down a phone line, and turns incoming sound signals back into computer data.

Modems differ in the speed at which they can send data down the phone line; it makes sense to have the fastest modem that you can afford to cut your phone bills to the bone.

The speed is measured as baud – effectively bits per second. Common speeds are 300, 1,200 and 2,400 baud. As the combinations of transmit and receive rates are complex they are often abbreviated to 'V' numbers – see the box for details of what they mean. V21, V22, V23, and V22 bis are the most common modem speeds, and the majority of on-line systems in the UK work with one or more of them.

There are other faster modem speeds than these, and nowadays a transmit/receive rate of 9,600 bits per second is possible, but the equipment needed to operate at these speeds is beyond all but the rich and the corporate. A modem that can use these superfast speeds could easily cost £1,200.

Some modems are manual, which means that you have to do the dialing and press a button when you hear the other system answer the phone. Other, more expensive, models are intelligent or automatic modems. These take over the dialing and automatically put you on line. The more intelligent modems will, in combination with software on the computer, answer the phone and 'take a message'. These are the modems that are on the other end of the line when you dial up a bulletin board. A cheap manual modem could cost less than £100, while a good, automatic, reasonably fast (2,400 baud), intelligent modem would set you back upwards of £300.

V SIGNS

V21, V22, V23, and V22bis are modem speed codes.

Transmission speeds are generally written down as the baud rate, with baud more or less meaning bits per second. The bigger the number, the faster the transmission and the quicker the receipt of data by your micro.

V21 is 300 baud transmit and receive.

V22 is 1,200 baud transmit and receive.

V23 is 1,200 baud receive, 75 baud send.

V22bis is 2,400 baud transmit and receive.

GOING ON LINE

Your computer is sitting there just waiting to talk to the world. Keith Pomfret explains what you need to get chatting to other machines around the globe...

When buying a modem look for 'Hayes compatibility'. The 'Hayes set' is a series of commands with which your micro controls the modem. If your modem uses the Hayes set then most software will work instantly with it; other systems may well require a lengthy setting up procedure. The name originates from the Hayes modem company who invented it.

The recent trend toward laptops and cell phones has made the portable battery-powered modem available, and it is now perfectly possible to go on-line from the fast lane of the M1, the cross-Channel ferry or even the delayed 15.31 from Bristol Temple Meads.

WIRING IT UP

Having bought your modem, you'll need to attach it to your computer. This is done via the serial port.

Amigas and STs have a built in serial port, as do



most PCs. The PC also offers the option of a modem card which slots into the machine directly, so avoiding using up a serial port.

If you own a CPC, Spectrum, PCW, Archimedes, certain sorts of PC, or an Atari 8-bit you will need to buy a serial port, for around £30. The dealer that you bought your computer from should be able to steer you towards one, or check the ads in Shopping Express. Exactly what fitting a serial port involves depends on the machine, but all these machines can be used to go on line with a bit of effort.

As is so often the way, there is not one standard type of socket for a serial port, so the variety of cables

and connectors is large. If your supplier doesn't have one in stock he can probably make one up for you. This can cost anything from a couple of pounds for a 'standard' 25-way D to 25-way D, to about £40 to have a special made up for something like the Macintosh which has a unique serial port connection.

SOFT STUFF

With a serial port and modem, all that's left to find is a piece of software to make it all work. For anyone reeling from the cost of a modem, software that doesn't break the bank is a welcome option.

Non-commercial public domain and shareware comms software is available for all the popular micros. The public domain ones are free and can generally be obtained from a PD library for the price of a disk and a small copying fee. Shareware is slightly different. You can get it in a similar way to PD and try it out, but if you like it and carry on using it, you are expected to send a fee to the copyright holder (whoever programmed it) and in return you get updates and documentation. It is possible to avoid paying for shareware, but this is frowned on as it dissuades programmers from making their work available.

PD software and shareware libraries advertise frequently in Shopping Express and, as many of them are run with enthusiasm as well as profit in mind, they are an invaluable source of information as well as software.

Software varies a lot in the features it offers and the interface it uses. Features to look for are teletext support (so it can display the Ceefax-style pages which some systems use) and a good telephone book. Many comms programs will let you store the phone numbers of the bulletin boards you frequently use in a phone list, and will dial the number with a single keystroke. Others even let you program-in all the logging on commands and passwords so the whole comms procedure can be automated.

The interface question is a matter of taste, but many find pull-down menus and icons easier to negotiate than function keys and typed commands.

GOING ON LINE

With your software installed and your modem connected, you are ready to dial up a bulletin board or on-line system.

In order to make the connection you will of course need the phone number of the system, but you also need to know the communications protocol. Your software will give you options for baud rates, data bits, stop bits and parity – you don't need to know what all these things mean, but you do need to make sure the settings in your software match those of the system you are trying to connect to.

A typical host system might describe itself as V21, V22, V23, V22bis, 8N1. As we explained earlier, the V numbers mean that it will accept calls at transmit and receive speeds of 300/300, 1,200/75, 1,200/1,200 and 2,400/2,400. The '8N1' on the end means that the data

WHAT DO I NEED?

You need the following things:

- A computer with serial port
- A modem to change the digital signal from the serial port into the nasty banshee wail that Telecom's phone lines can handle.
- Communications software to access newdata or scrolling systems.
- A telephone line with the standard Telecom socket to plug the modem into.
- Copious quantities of disposable income.



is sent, with 8 data bits, no parity and 1 stop bit. Set these parameters into your software before you start dialling out.

If you don't know the protocols of a system that you are trying to access, try 8N1 and 7even2 (7 data bits, even parity, 2 stop bits) as these account for over 90 per cent of systems.

If you are given options for the speed, always pick the fastest that your system can handle to cut the phone bills.

WHEN YOU GET THERE

Having set the protocols, dial up the system's number. Depending on which type of system you are accessing, when you connect you should get one of two things.

If you access what is known as a viewdata system, your screen will be formatted in coloured blocks and text very similar to the teletext service. From on-screen choices, different screens can be accessed, and you can move from area to area by typing in numbers to change screens or following on screen prompts, just like Ceefax.

The other sort of system is described as 'scrolling'. Here the screen is set out in text, usually about 80 columns wide, and it looks like a document in a word processor scrolling past.

Assuming that it's your first time on a system, you will have a register in some way. Some of the commercial systems take your details (and money) and give you logging on details prior to your going on line. Most systems will allow you to join on line by prompting you for your name and a password. If it's your first time on, the system won't recognise your name and will take you through various questions designed to help the system's manager (the 'sysop') check you out before allowing you access to the system.

Some kindly sysops will let you get away with using CB-style 'handles' instead of real names, but abuse of on-line systems is making this rarer. At the end of the day, does it really matter that a pipefitter from Oswaldtwistle called Eric Blenkinsop prefers to be known as The Flying Turbine? Probably not, but I wouldn't go around with a guy who thought he was part of a jet engine, would you?

When you eventually get through into the system, most allow you to type a single letter abbreviation for the service that you require. It might be C for 'call' or P for 'page the sysop' if you wanted an on-line chat, or M for 'mail' or U for 'utilities' or suchlike. Typing a question mark at the main menu should get you a list of choices to follow.

Remember that as soon as the host system

answers, you're paying for the phone call as if you were talking. It is better and cheaper to scratch your head off line while you try to work the problem out than to pull your hair out with Telecom dragging you into bankruptcy.

Here are a few bulletin boards to log on to and dip your toe in the water before you start on the real money grabbers, the commercial on-line services: West Coast BBS (0752 670784, 1900-0600 daily V21, V23, 8N1); Bath BBS (0225 835841, 24 hrs, V21, V22, V23, V22bis, 8N1); The Loft BBS (0442 230461, V21, V23, 8N1); and the Gnome At Home (081-888 8894, V23, viewdata).

HAVE FUN

So, you've bought the kit, plugged it in and gone on line. Be warned, now is the time to start saving for your new improved phone bill. Comms is so addictive the chances are that you'll be getting a nasty shock when that arrives, but at least you'll have some new-found knowledge to show for it.

Enjoy, don't panic, and come back next week for a full walk-through description of a bulletin board and some of the ways you can save money by setting up your own host system and letting someone else pay the phone bill. ■

SHOPPING FOR MODEMS

Pace Micro Technology does a range of intelligent modems from a V21/V23 Linnet (£150) up to a 9,600 super-fast machine at about £1,000. Pace also does PC modem cards. Phone 0274 532000.

Modem Marketing does a complete range of modems from the most basic to the most specified. Phone 0733 371388.

Amstrad does a couple of good value V21/V22/V23/V22bis modems. One is a 'stand-alone' (£249) and the other is a card for internal fixture into a PC (£199). Phone 0279 454555.

Miracom starts its range at about £100 with an entry-level manual modem, and its list also includes intelligent modems. Phone 0473 233888.

Digital Matrix does the Datatronics range with a £300 V22bis model that can recognise voice data and plays music on the line while you change from data to voice. Phone 021-704 1399.

TROUBLE SHOOTING

If you find that you are stuck, can't find what you want or cannot persuade the system that you are accessing to react in the way that you wish, there is a simple checklist.

• **ARE YOU ON LINE?** The flashing lights on the modem should tell you that that - check your modem's instructions to see what indication it gives of being connected to a host system.

• **WHAT IS ON THE SCREEN?** Is it readable or is it garbage? If there's something that you can read or make sense of, it's probably worth continuing. If there's nothing on the screen at all, try tapping the Escape or Return key a few times. Some

host systems need this to wake them up. Wait a few seconds and if there's still nothing, log off (see below). If there's nothing but garbage on the screen, log off and check that you have the correct baud rate and protocols for the system that you are trying to access.

Remember that viewdata and scrolling host systems work in different ways and need different software or software configured for both systems.

• **LOGGING OFF** If there is no chance of dialogue with the host system, log off in one of the following ways. If your modem is manual, either following the disconnect or

reset instructions in the manual will 'drop' the signal and disconnect. If you use an 'intelligent' modem of the sort that supports the Hayes protocols, type three '+' signs in quick succession. You should see a reply on the screen saying 'OK'. Then type 'ATH' (the Hayes code for hang up) and the software should clear your line.

• **GETTING HELP** If you are on line and having difficulty, get the system to help you. The simplest way is to type a question mark. Most bulletin boards respond to this with a list of options. Choose the option that best suits your requirements and type in what it suggests.

TECH TIPS



■ TIP Printer buffer

Regarding the question put to you in Tech Tips (*Express* 70) by Andy Beveridge of Fleet, Hants. One of his questions was whether or not he could use his Commodore 64 as a printer buffer for his Commodore Amiga. Well in an old issue of *Zzap!* there is an advertisement from Trilogic which includes such a system. ■ consists of hardware and software to link the Amiga to the CBM64 so the latter can be used as a printer buffer. The advert has not appeared for some time but Trilogic's address is Unit 1, 253 New Works Road, Bradford BD12 0QP. I suggest that Mr Beveridge writes to them and asks ■ they still produce this item. I hope this information will be of some help.

A. Wright, Thorplands, Northampton.

■ HELP! Which computer?

I'm at the moment thinking of upgrading but I don't know what computer to upgrade to. The present computer I have is a Spectrum Plus (don't laugh). I would be able to pay up to £200.

I would need this new computer for gaming and it would also have to have a quite good BASIC language because I am a keen programmer. It should also have good enough graphics to make Atari ST and Commodore Amiga owners jump. Good sound would ■ appreciated as well.

Harjinder Somel, Kettering, Northants.

And with one wave of his magic wand, Uncle TT produces the ultimate cheap machine? Harjinder, your letter reads as though I was about to create your desired machine from parts I have lying around at home – not that simple I'm afraid.

£200? You already have a Spectrum Plus and you want a machine with decent graphics, sound and BASIC? Buy the SAM Coupé.

Now that it's finally here in reasonable numbers, the SAM is definitely a computer that deserves serious consideration (especially for one-time-owners of Clive's baby who will probably have a lot of Spectrum software lying around). The SAM is Spectrum compatible (to ■ degree), has good graphics and sound capabilities and can be had for well under £200.

It's expandable – drives and the like can be bought at any time and simply plugged in – and a machine of quality construction which Miles Davis

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Uncle Tech Tip and he'll soon see you right. Send your sorry stories to Uncle TT, Beauford Place, 30 Monmouth Street, Bath BA1 2AP. There's a prize for the most pitiful tale.

Associates (the machine's manufacturer) took a long time to bring to market, ironing out bugs ■ the process.

■ HELP! All of C

I wish to learn C. My priority is learning the language and not speed of programming and I need a version of C that will give me instant feedback on any errors. Therefore a C interpreter would suit my purposes, but there seems to be a lack of choice in the advertisements. I have noticed however that HiSoft markets a C interpreter. Would this program suit my needs? If not, what do you suggest? Also, are there any tutorials that are suitable for the beginner to the language, available for use on the Atari 520STE that you could recommend?

I have recently purchased a copy of Ian Sinclair's *Simple C: A Beginner's Guide*. Excellent though it is, it is after all only a beginner's guide. Please do not suggest Warwick Grigg's course in *ST Format*, for it is entirely unsuitable for the absolute beginner to C.

Another quick question. Do you know why Atari supplies its ST BASIC with a disk at revision D but a sourcebook/tutorial at revision B? I could not get a satisfactory answer from Atari – the company says that's all there is!

I Bateson, Hanworth, Middlesex.

Hang on! You don't want to follow Grigg. W's tutorial in *ST Format* because it's not possible for the complete amateur to keep up with the action, yet you're scathing about Ian Sinclair's C guide because it's intended for the rank amateur! Tell me I Bateson, what do you want?

A book which I used extensively while at University was *The Big Red Book Of C* published by the Sigma Press and available for under a tenner from most good High Street book stores. This guide assumes no prior knowledge on the part of the reader, yet leads you into fairly extensive programming quite quickly. Ludicrously cheap at the price, it's well worth a look.

HiSoft ■ a respected producer of

language compilers and its C interpreter ■ no exception. If you're looking for a C interpreter then look no further than the HiSoft offering.

And as for your final question, I'm afraid the honest answer is that I have no idea why Atari supplies a sourcebook/tutorial for revision B of its ST BASIC, but a disk for its revision D. But then if Atari was being honest, it'd probably say the same thing...

■ HELP! Quality print

I have an Atari ST and I use the excellent Degas painting package and 1st Word word processor. What I would like to know is, does any company offer a service to print 1st Word files and documents containing text and graphics with a laser and is there anyone who can produce photographs from Degas files? I would appreciate any help you can give me.

Angus Irons, Selly Oak, Birmingham.

I do seem to remember seeing an ad in the classifieds offering a laser printing service for a reasonable rate but can't for the life of me, find the ad – and so can't give you the address or telephone number I'm afraid.

As for photographs, why not produce your own? This is not quite as difficult as it sounds and with a modicum of care, quite respectable results can be obtained. Want to know how? Read on...

You'll need a single lens reflex (SLR) camera, a tripod, cable shutter release and a roll of fast colour film (ASA 400). Bung the film in the camera, the camera on the tripod and the cable release in the shutter button. Open the lens as wide as possible (usually about f1.7 on most reasonable quality cameras) and set a shutter speed of 1/4. Darken the room as much as possible and stand the tripod in front of your monitor or TV so that the lens is positioned as squarely as possible relative to the screen. Now get you Degas picture on screen, take up the cable release, hold your breath and fire the camera. Move the speed setting to 1/8 and repeat the

process, then again at 1/15. Eventually, you'll have three exposures of every screen you wish to photograph. Send the film off for processing and when it returns, select the best exposure of the three for each screen. Simple, right?

■ HELP! Menage à trois

Every week I read your column with interest and very good it is too! (Flattery will get you absolutely everywhere – Uncle TT). I was wondering if you could help me with a little problem (your tongue's stuck to my boots, right? – Unc). I have an Amiga A500, an Olivetti M10 portable and a Sharp IQ7000 organiser. The M10 has communications software built in and I have Access! for the Amiga. If I want to connect them together, do I just get a null modem cable connected to both RS232 ports, set both to a baud rate of the same value (as well as all the other settings) and start, or is it more complex than that?

Now for the question of the year. I have *Transformer* for my Amiga. If I purchase the level converter with the software which is meant for the PC, will it work under *Transformer* so I can save ■ all the IQ's information on disk?

Last but not least, I am purchasing an Amstrad DMP4000, and I have ■ printer cables for both the Amiga and Olivetti. Will I have to change any settings on the printer when using the Olivetti or does it output Epson codes? I do hope you can help with these problems and keep up the excellent work with the column.

G Harris, Bognor Regis, West Sussex.

Connecting the Sharp IQ7000 and Commodore Amiga should entail no more than connecting a cable between their respective RS232 ports, setting the comms software as you say and starting the process.

As for the level converter and *Transformer*, I would be very surprised if the two would work happily together. *Transformer* uses lots of little software 'cheats' in order to do its stuff and these tend to get in the way of any software not completely 'legal'.

To use the Amstrad DMP4000 effectively with the Olivetti, you'll need to set the printer into IBM mode. It will then be able to interpret the codes output from the Olivetti. This setting is usually effected using a dip switch in a completely inaccessible place on the printer – but there you are, that the fun you get with two incompatible computers using the same printer.

■HELP! Overloaded PSU

I own a Commodore Amiga with a MAST twin external floppy disk drive attached. The company I purchased it from warned me that bad picture quality might result from running three disk drives on the Amiga's own power supply.

Since then, I have read that the Amiga's power supply unit will be over-worked and could be damaged ■ I use two external floppy disk drives without their own power supplies. One magazine said "...the A500's power supply will not cope with more than one unpowered external drive".

I have had my twin drive for over a year now and have experienced no picture interference or other problems, even when ■ three drives are being accessed simultaneously.

Am I damaging my Amiga by not using an external power source when I run the drive?

Daniel Talkington, Reading, Berkshire.

Apparently not! One cannot argue with experience and in your experience the Amiga appears to be perfectly OK, even with all three drives whirring away ■ once. I think that in the interests of the machine, it's probably advisable not to use more than one unpowered external floppy drive with the Amiga, but if your system is fine, then carry on.

■HELP! One in a million?

Being a fairly honest sort of chap, I am interested in the principles of shareware. I have obtained a program from a PD library which originated in Canada. As the documentation is limited, I would like to send the author the suggested amount of \$20.

Could you please tell me the best and safest way to do this as cash through the post is obviously not on.

Simon Hiscocks, Penarth, South Glamorgan.

The normal method is to send an International Money Order available from banks and post offices. These cost a pound or two but are generally regarded as being the safest way to send money abroad.

What you haven't taken into account however, is that although you want to do the decent thing and send the moolah to the author, many programmers in the States and Canada don't always bother to send the promised documentation, program updates and so on

outside the continental USA. A drag, right? But that's the way it goes I'm afraid. It's apparently too expensive and difficult to put the necessary in the mail to the UK from America and Canada.

■HELP! Clocked out!

I have had some trouble with my Commodore Amiga recently and was wondering if you could help? The system clock seems to have stopped. I set the time from the battery-backed clock using the SETCLOCK load command and the time is set correctly, but it stays at the same time until I repeat the process.

I cannot understand this because some games which use the timer seem to work all right. I know it is not a virus as I have tried several disks which I know to be virus free and have tried my own workbench disk on another machine.

I rang a local dealer who said that it would cost £100 to repair. I don't think it's worth spending that amount of money on such a minor fault as apart from this my machine (which is three years old) works perfectly well.

Adrian Fox, Chesterfield, Derbyshire.

Seems to me that your battery-backed clock is no longer battery backed! £100 to repair indeed! Take the machine along to a reputable dealer and have the battery changed. I think you'll find that's all that is needed to get you on time again...

■HELP! Little Acorns

I have two problems on which I hope you can give me some assistance. Firstly, I have purchased ■ second hand Acorn JP101 inkjet printer and, as seems the norm, the previous owner had lost the manual. The printer works fine with my CPC464 but is permanently in draft mode. Is the printer capable of better print and if so, do you know the relevant codes? I have contacted Acorn who suggested a possible source for a manual but unfortunately, the supplier had no knowledge of this machine. The printer uses Olivetti ink jets and could well ■ one of theirs with an Acorn badge. Would the print quality be improved by using ink jet rather than standard paper?

Secondly, I have also purchased an Atari 1050 disk drive which I would like ■ connect to my CPC464 as a second drive.

■ this is possible, could you please advise me of a supplier for a cable or the relevant connectors and connections?
Neil Barret, Leeds.

I'm afraid I don't know the control codes to get your Acorn-badged inkjet printer into near letter quality mode (if indeed the device provides such a mode) and can only print a plea for TechTippers who have now, or have ever previously owned, a printer of the same specification, to send in an unwanted manual which I will gladly pass on to you.

Using paper especially intended for inkjet printers may help with the quality of reproduction but I doubt it. Stick to ordinary paper and save yourself the expense.

As for the Atari disk drive, I hope you didn't pay too much for it, because it simply cannot be used with the Amstrad CPC464 – at least not without major surgery and even then it'd be doubtful. Bung an ad into Shopping Express or contact Edmund Blake, author of the Express Atari 8-bit column who may have ■ suggestion. ■

■HELP! Can I attach any old printer to my Commodore 64?

Is it possible to wire up just about any printer to work on a Commodore 64 or would you need special software for each different make? I've seen so many cheap printers and plotters advertised in magazines lately and wondered if it would be possible to rewire them. For instance, a Sharp printer/plotter which was intended to be used with a Sharp computer.

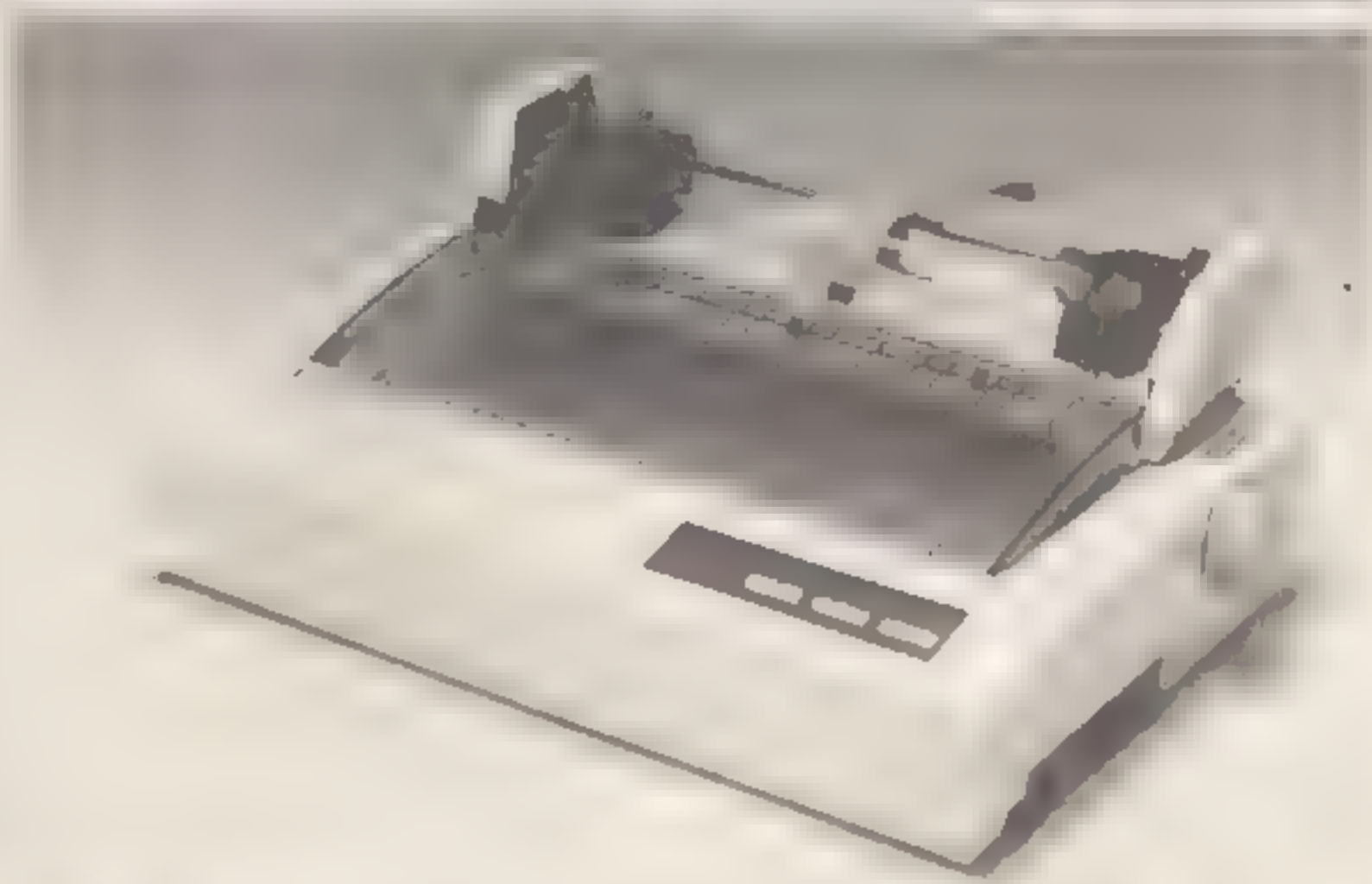
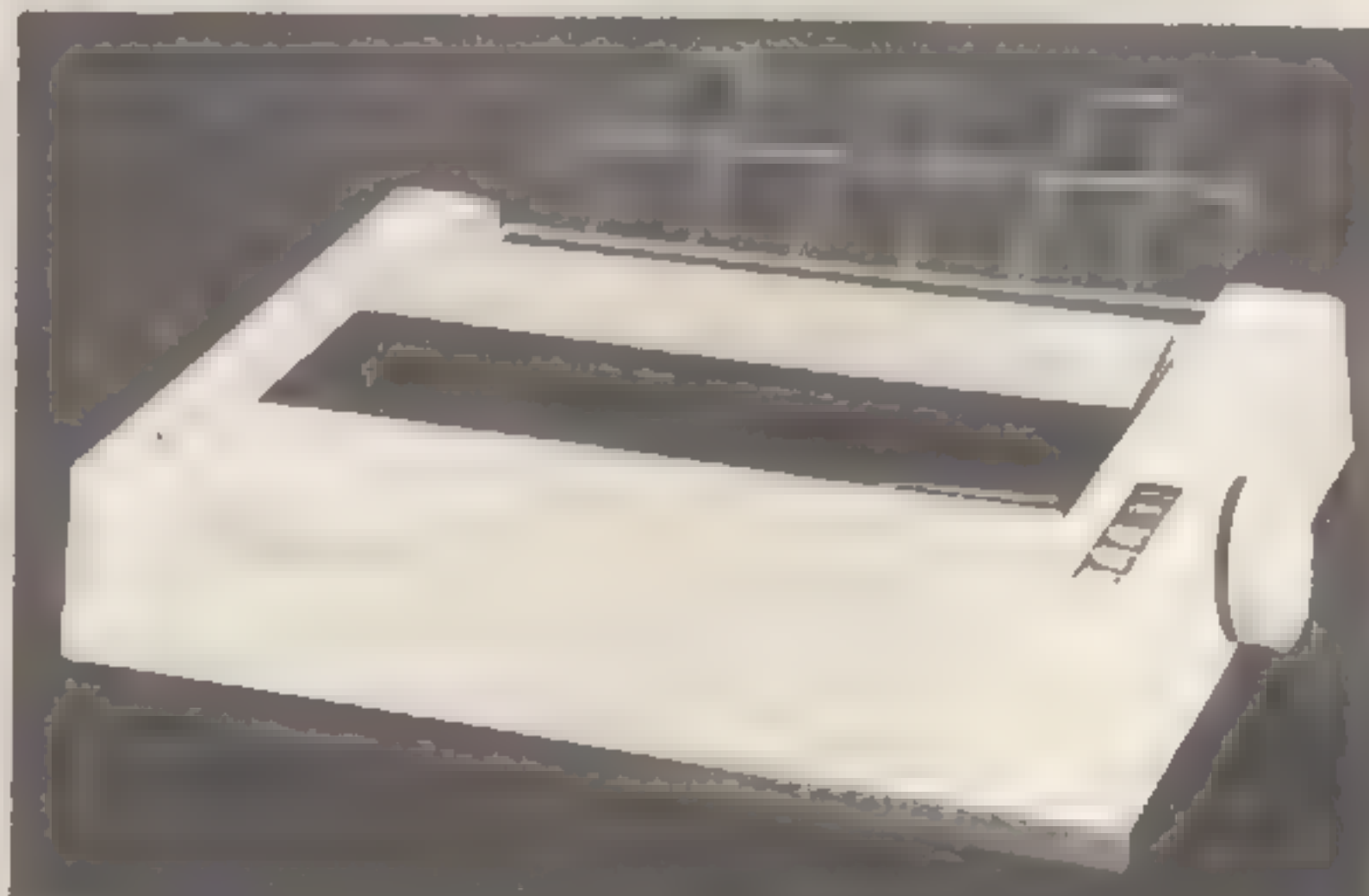
Also, please could you explain the difference between Centronics, parallel and RS232 interfaces?

P Hodgson, Maryport, Cumbria.

It is not possible to 'rewire' printers to work with the Commodore 64, but it is possible to buy a printer interface for this computer so that it can make use of standard printers. Like so many other early 1980s computer manufacturers Commodore equipped their 8-bit machine with completely non-standard interfaces to lock users into buying Commodore's own peripheral equipment (usually at grossly inflated prices).

With an interface, you'll be able to buy any of the standard printers such as those marketed by Panasonic, Star and Citizen (the most popular makes at the moment) and attach them directly to the CBM64 without problems. These interfaces are available from a variety of advertisers in Shopping Express, so have a good rummage and see what you can come up with.

And so to the interfaces themselves. Centronics and parallel are – almost – one and the same thing, in that the Centronics interface is parallel.



• Best selling printers from Panasonic and Citizen which need an interface to connect to a C64.

The signals emitted from the interface are transmitted in unison. Centronics is a brand name for a type of parallel connector. RS232 on the other hand, emits signals one after another. For

printers, parallel is used almost exclusively – it's fast and simple. RS232 used to be used extensively for printing, but now is restricted almost exclusively to communications.

■ Play us a game, SAM

The SAM Coupé has been around for nearly five months now, and still suffers severely from a lack of software. The Spectrum compatibility ■ not as big an advantage as was ■ first thought. Only a small proportion of Spectrum games actually work on the SAM, and even when you load the Spectrum ROM into the SAM you have big troubles trying to get it to pick up the sound.

The Coupé's release was considerably delayed. When people actually got their SAMs they had a long wait for the DOS. MGT has promised to produce a mouse but it still isn't on sale. With software, there are a number of companies promising to release games but they still haven't come out. It seems that the smaller companies are taking the lead - LERM has released an assembler and SAMTape 1 and PCG has released a DTP.

Some ■ our subscribers have written letters saying they are very worried about this situation. They think it might be another Enterprise, C16 or Memotech.

A computer ■ not alive unless it has a good supply of software releases. That's what is desperately needed, so - calling all software houses! There ■ a good untapped market out there and if you release some good games on the SAM you could make a killing (and loads of money).

Adrian Bett, Editor, Turbo.

More criticisms of Messrs Miles and Gordon. We have contacted MGT and arranged to put to them ■ the praise, criticism and questions about the Coupé soon. Watch Express for more details.

■ Seeing the fungicide

I feel I must write in defence of myself. I am referring to the letter in Express 80 from Michael Fianz.

I wasn't the only person to use the name 'A. Programmer' but I was the first; my name ■ actually Fungus the Bogeyman, but I didn't think anybody would believe me.

Fungus the Bogeyman

Unfortunately, readers, he's telling the truth about his name...

■ Rather rude

First, thank you for printing my reply in Express 79, I was glad to be allowed the opportunity of doing so.

Secondly, in reply to the rather rude Michael Stirling (Express 79): if you don't have the mentality of a 14-year-old schoolboy, why does your letter have the distinctive 'so there' ring to it?

Allow me to put you in your place; you have misunderstood me. Of course the icon bar automatically scrolls itself. TinyDirc has nothing to do with this operation, but the reason for loading it is that it is an easy way to fill up the icon bar to demonstrate the scrolling. OK?



EXPRESS MAIL

Britain's liveliest computing forum - packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: Express Mail, 30 Monmouth St., Bath BA1 2AP. Sorry, no personal replies, even with an sae. This week's replies written by Keith Pomfret.

I didn't agree with Keith's reply, but he's entitled to his opinion.

By the way, I'm a 15-year-old schoolboy. Now you weren't expecting that! Chris Eason, Leamington Spa, Warks.

This slanging match is now closed.

■ PCWs rule okay!

Is there any truth in the rumour of a 'new' PCW? Namely the PCW2024, with 20Mb hard disk alongside the 3-inch disk, plus

24-pin dot-matrix printer. It would have all the LocoScript programs plus a new one, LocoTool, a toolkit for converting PC disks and a data recovery program. Am I being too hopeful?

Jokes aside, could I ask you to include a few games profiles for the PCW? All the games featured in your mag are for Amiga, ST, Sinclair and PCs.

I admit the screenshots would not look very good, but it would prove to the 'mine's better than yours' brigade that the PCW does have a games capability.

On the 'mine's better than yours' front (no I won't say that mine is), have you noticed that ■ all the adverts for pen-friends come from Amiga owners?

Does this mean that their computer leaves them feeling so lonely that they need ■ find friends? Or are they just spending so much time trying ■ get their computer to work that they haven't time to walk out their front door and find friends that way?

Sorry, I had meant this to be a short, jokey letter. Now look at me rambling ►

Hiding the facts about those Amiga hard drives

Regarding the article "Learning to drive" in Express 78, the price of Commodore's A590 is quoted at £574, which I am sure succeeded in completely putting off anybody hoping to buy this drive.

I bought my A590 in November and it makes one hell of a difference to the Amiga system. OK, maybe the access time isn't exactly greased lightning, but with all the Amiga C commands, libraries, devices etc available on one unit, I have never figured out how I did without it. To a non hard disk user this may sound a ■ overdone, but I can assure you the difference is overwhelming. PC users used to snigger behind Amiga users' backs when they looked at the prices of Amiga hard disks, and now that prices have become more or less reasonable I don't want ■ give them the pleasure.

On top of the hard disk I managed to expand my 1Mb system to 2Mb for only £78 using the built-in board, which isn't ■ all bad. On the Tech Tips page of the same issue the author pointed out that 1Mb is "useful for really big word processed documents and scrummy picture files". Why doesn't somebody remind him that the Amiga is a multi-tasking system? I don't write particularly long documents or draw scrummy pictures but I quite frequently use up my 2Mb with pure multi-tasking. The author

made the Amiga sound like an 8-bit (heaven forbid).

Paul Gardener from Maidstone had some trouble with an LC-10C, I have the mono version and have also been having trouble with printer drivers. Some Epson drivers print pound signs instead of hashes, and the ones which print them as hashes don't print proper graphics. I have been recommended to try the Epson FX driver for mine, but it's only mono. LC-10 owners can also try putting the printer into IBM mode and using the CBM MPS1000 driver for interesting type faces.

As regarding escape codes, the LPRINT command will use the Amiga control codes (described in the Amiga manual) whereas the following line: OPEN "PRT:" FOR OUTPUT AS #1 will use the printer's control codes if you use

PRINT #1, [string or escape code] instead of LPRINT. Remember to type CLOSE #1 when you've finished addressing the printer, though. Another fault with LPRINT is that it doesn't close the printer device, so don't use LPRINT before PRINT #1.

Going back to hard disks, if anybody wants help setting up their Amiga hard disk I would be pleased to try. I have enough PD utilities at hand to provide quite a good front-end without

too much trouble. Also remember ■ frequently back up hard disks, you can try using MRBACKUP which is PD. Contact a PD library or me if you want a copy. I should just stress that I am not a company, just a fairly experienced Amiga user who would be pleased to help anybody. And no, I'm not interested in buying pirated games. Any correspondence will be gratefully received. Write to me.

David French, Gateacre, Devon Road, Salcombe, Devon TQ8 8HQ

What good would hiding the price and the access time of a hard drive from our readers do? The Commodore A590 ■ expensive and slow. It may speed things up a lot by Amiga standards but is still a snail by comparison with a good PC hard drive. The article you mention was a general round up of many machines and not just an Amiga-plugging forum.

Thanks for your tips on printing and hard disk back-up. There would be less tears if people realised that hard drives like all media aren't immune to failure, and, because of their size, failures are usually catastrophic.

I'm sure Amiga owners will probably be grateful of a knowledgeable contact for help in setting up a hard drive.

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created ... affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

**ABC
TURBO**
AVAILABLE: JUNE 90

To put the ABC even further ahead in the competition, we have introduced a special 'Turbo' version, which includes a super fast RLL hard disk controller to increase the data transfer rate from 150KBytes/s to 800KBytes/s, with a performance index of 4.801. Plus! to provide exceptional graphics with an outstanding colour resolution of up to 1024x768, we have included a Super VGA graphics adaptor and a 14" VGA colour monitor (which also supports 1024x768 resolution), all for an additional price of only £300. Check the ABC Turbo against the competition, at only £1299 (+VAT) with 30Mb hard disk, Super VGA colour graphics capabilities, plus 12 months on-site maintenance, it offers unbeatable value.

LOW PRICE - HIGH SPEC!

CPU+MOTHERBOARD	<ul style="list-style-type: none"> 8Mhz 80286 16-bit CPU Landmark Speed = 10.3Mhz, Norton SI Test = 9.0 Latest NEAT (New Enhanced AT) technology chip set Has user selectable bus, DMA speeds & wait states Programmable to operate at 0 or 1 wait states 640K RAM base memory (expandable) Motherboard expandable to 4Mb RAM memory Real time clock with battery back-up Full 16-bit data line capability Socket for 80287-8 numeric Co-Processor 3 16-bit AT expansion slots (max)
DISK	<ul style="list-style-type: none"> 32Mb RLL hard disk - 150KBytes/s transfer - 60ms access Fast disk controller - 800KBytes/s transfer - Turbo version 1.44Mb built-in 3 1/2" floppy disk drive Space for two 5 1/4" and two 3 1/2" drives (max)
I/O	<ul style="list-style-type: none"> Parallel port built-in (25-pin Centronics) Serial port built-in (9-pin RS-232) Mouse controller port built-in (9-pin serial)
GRAPHICS	<ul style="list-style-type: none"> Super VGA video graphics controller - 512K - Turbo vers Super VGA: 256 colours in 800x600 res - Turbo vers EGA video graphics controller built-in EGA: 16 colours available from a palette of 64 EGA: 256K of dedicated Video RAM built-in MDA, CGA and Hercules graphics controller built-in
PHYSICAL	<ul style="list-style-type: none"> Low noise operation Ergonomic small footprint (38cmx41cmx15cm) Keyboard - 102 key enhanced AT (12 function keys) Keyboard - has 2 position height adjusters
PLUS!	<ul style="list-style-type: none"> Fully OS/2 compatible (requires 4Mb RAM) Supports Industry Standard Networks MS-DOS 3.3 with GW BASIC 3.22 12 Months FREE on-site maintenance included

286 AT

WITH 30Mb HARD DISK & EGA MONITOR - £899

FREE! - ON-SITE MAINTENANCE
FREE! - TECHNICAL SUPPORT HOTLINE
FREE! - TEST/BURN-IN BEFORE DESPATCH
FREE! - OVERNIGHT COURIER DELIVERY

£899
WITH +VAT
**30Mb
HARD
DISK**
AND
**EGA
MONITOR**



**ABC
TURBO**
EXC VAT
£1299
• SVGA COLOUR MONITOR
• SVGA GRAPHICS CARD - 512K
• 30Mb HARD DISK DRIVE
• FAST DISK CONTROLLER

£899 +VAT= £1033.85

ATARI

	3 1/2" FLOPPY DRIVE NO HARD DRIVE	3 1/2" FLOPPY DRIVE + 30Mb HARD DRIVE
NO MONITOR	£599 +VAT = £688.85	£799 +VAT = £918.85
+ EGA MONO	£699 +VAT = £803.85	£899 +VAT = £1033.85
+ EGA COLOUR	£799 +VAT = £918.85	£999 +VAT = £1148.85
ABC TURBO EXC VAT AVAILABLE: JUNE 90	£1099 +VAT = £1263.85	£1299 +VAT = £1493.85

SILICA SYSTEMS OFFER YOU

ON-SITE MAINTENANCE (8 hour response): Available Free of Charge on all ABC's.
TECHNICAL SUPPORT HELPLINE: Team of Atari technical experts at your service.
100% QUALITY CONTROL: Every ABC is tested/burnt-in before despatch.
FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13m TURNOVER (with 60 staff): Solid and reliable with maintained growth.
BUSINESS/EDUCATION/GOVERNMENT: Volume discounts available for large orders.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
SHOWROOMS: Demonstration and training facilities at our London & Sidcup branches.
THE FULL STOCK RANGE: All your Atari PC requirements from one supplier.
FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: Cash/cheque/credit card/credit - we are licensed credit brokers - details on request.

Before you decide when to buy your new Atari ABC, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your ABC, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new ABC products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

**SILICA
SYSTEMS**

MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111
Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening Fax No: 081-308 0608
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Fax No: 071-523 4737
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811
Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm Fax No: 081-309 0017
BUSINESS/EDUCATION: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-308 0888
Order Lines Open: Mon-Fri 9.00am-6.00pm Closed on Saturdays Fax No: 081-308 0608

To: Silica Systems Ltd, Dept NCE 0590-28, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND INFORMATION ON ATARI PC's

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Tel (Home): Tel (Work):

Company Name:

Which computer(s), if any, do you own?

EOCE - Advertised prices and specifications may change - please return the coupon for the latest information.

on, showing off the ease of letter writing with a PCW, ho hum. Better stop now or you'll probably cut me off in mid
M J StClair, High Littleton, Bristol.

And I thought rambling was something reserved for those strange middle-aged men with trousers that only reach their calves. Perhaps you are one of those? The PCW rumour sounds a little far fetched, but a quick call to Amstrad revealed lips as tight as they normally are just before product launches.

We generally mention games if their publishers tell us about them. I agree that there are some fine games on the PCW, but if the people who publish them don't tell us, we won't know. PCW publishers take note.

■ In-house pirates

I recently bought *Manic Miner* for my Amiga (don't laugh, it's an excellent game) but became concerned when I read the credits. Tucked away in a list of names were regards for 'Bamiga sector', 'Quartex' and 'The Scouse Cracking Group'. As far as I am aware these groups are cracking and piracy groups and I would like to know how their names were allowed to get on to a commercial disk.

It seems absurd that Software Projects would condone piracy, so I can only assume that these names were put in by a programmer without Software Project's knowledge (although this is questionable too, since the programmers

are the ones who lose most through piracy).

I would suggest that Software Projects removes the names from future issues of the game and tries to track down who is responsible for them. Maybe I'm over-reacting slightly, but if there is a person in the company with connections with pirates then surely it is in Software Project's best interests to find them.

S McCartney, Ayr, Scotland.

Apparently there's a new trend of poachers turning gamekeeper. Perhaps this is such a case.

■ Too late?

Let me begin by saying that I have been buying your publication since its birth and wish to congratulate you on the quality and variety of issues and reviews. The only reason I haven't taken out a subscription is because you are going to give me one for this sparkling bit of prose. (Oh no we're not - Letters Ed)

Right, that's the grovelling introduction out of the way, now for the real reason for my letter. I am one of those people who object to the 'my computer is better than yours' debate. However, in the past few days I have been the victim of the above mentioned.

For the past two years I have been using, happily, a Commodore PC10, but I wish to change computers, as I would prefer something that is capable of word processing and can turn in a respectable

performance as a games machine. The Atari 520STE seems to be perfectly adequate and I think it will become the Atari standard. However, while in a computer store yesterday I was subjected to cries of "why buy a Skoda when you could have a Porsche" - obviously referring to the Amiga. What I need from you is a few comforting words to revive my battered ego.

Finally, why do people say that the STE has come too late and that everyone will program for the basic ST - this state of affairs does not exist in the PC world, perhaps the software companies ought to think about that one.

Justin Henzie, Kingston Vale, London

The simple answer to your Skoda/Porsche problem is to pick your computer shop carefully. In a computer shop in Preston the assistant spent a good 10 minutes trying to avoid telling me anything about the Amiga while extolling the virtues of his beloved ST. Pick a dealer who is enthusiastic about your chosen machine.

People say that the STE has arrived too late because of the large base of software available for the original machine that can't take advantage of the 'enhanced' features of the STE.

Your need of a good games/word processing engine will be well served by the ST. Our sister magazine *ST Format* manages quite nicely using *Protext* as a word processor on the same machines that are used for bashing aliens ■

NEXT WEEK

GETTING AROUND
Practical guide to laptop computing

BOARD STIFF
Setting up your own bulletin board

ROM STUFF
How CD-ROM is finally here in force

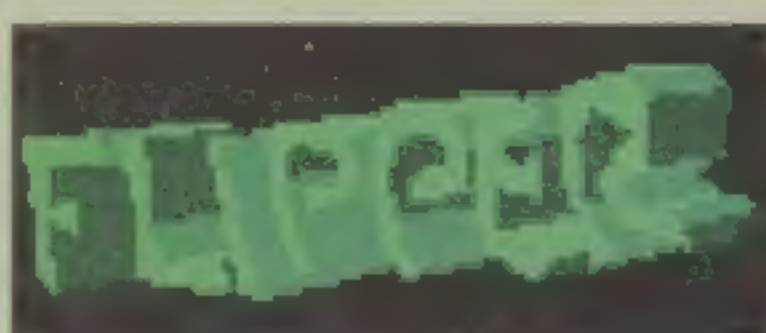
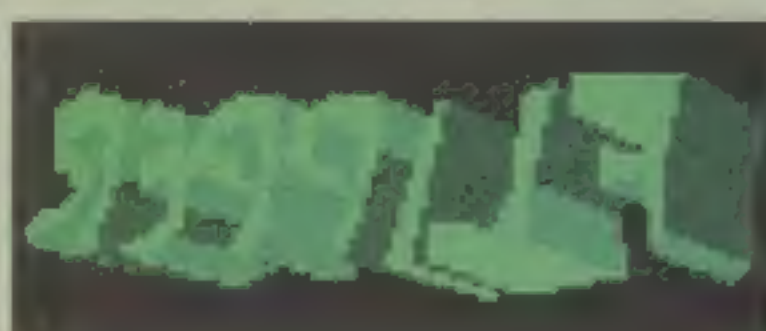
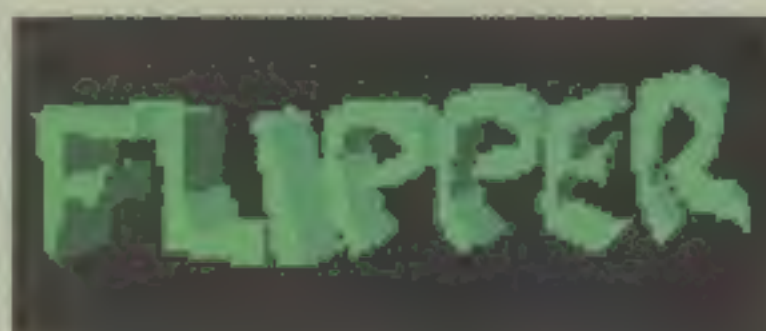
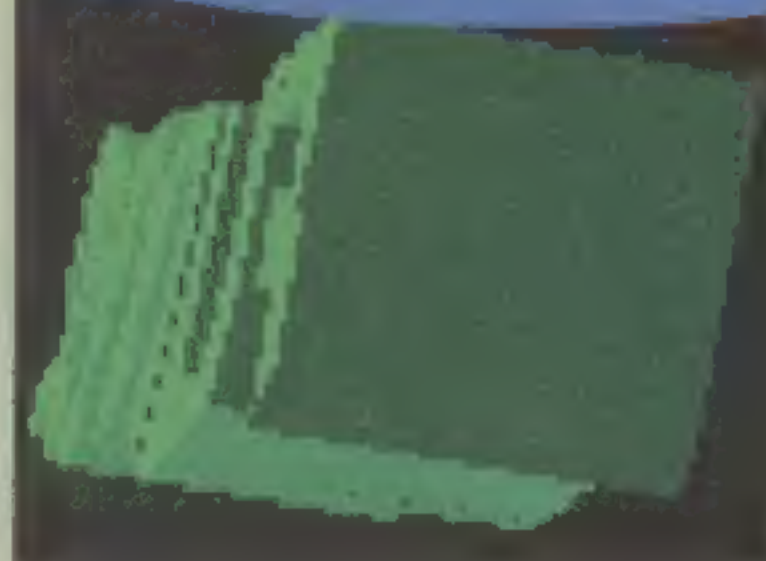
PLUS

Columns for your machine, all the regulars and the most up to date news service in computing

OUT THURSDAY

Win a graphic treat for your Amiga

Just the Word



It's Amiga graphics time in week three of our summer series of Just the Word competitions, with almost £600 worth of prizes to be won courtesy of Gem Distribution.

The first package up for grabs is Mindware International's *PageFlipper Plus FX*, a full-screen special effects program with ANIM support. PFX works at all Amiga resolution levels in overscan, extra half-bright and HAM modes, and allows animations to run at up to 20-30 frames per second in high resolution, 40-60 low res.

Animations may be compiled to run in parallel, and fades, wipes, dissolves and custom transitions are all available.

Also on the menu this week is *PageRender 3D* from the same manufacturer. As you might guess, *PageRender 3D* is an image rendering program which supports stereo vision via the red/blue glasses included or Haitex X-Specs.

Four draw modes are available in any resolution, and scenes are not restricted to screen size but are limited only by available RAM.

Rotation and motion are possible, with automatic tracking. ANIM files may be generated, and the package can be used in conjunction with PFX to produce powerful 3D animations.

Each of these programs costs £99.99 in the shops, but three lucky readers will each win the pair of them

for the price of a postage stamp by answering one simple question correctly.

Somewhere in this issue of *Express* - either in the editorial or in an advertisement - is the word OSWALDTWISTLE. All you have to do is find that word, go back to the previous sentence and write the final word of that sentence in the space provided on the answer form.

Fill in your name and address and send your entry to Gem Competition, *New Computer Express*, 30 Monmouth Street, Bath BA1 2AP, to arrive not later than Monday June 11.

The first three correct entries out of the hat will be the winners, and the editor's decision is final.

NAME

ADDRESS

The final word in the sentence before the one containing OSWALDTWISTLE IS

ATARI and Commodore BUSINESS DEALS from DIGICOM

COMMODORE STARTER KITS

The Commodore PC's - widely regarded as the best IBM PC compatible machines on the market - now include Starter Kits to help the first time user

Each Starter Kit includes:

- ★ VHS Video showing how to set the system up
- ★ Typing Tutor Program by Mavis Beacon
- ★ Word Processing Software PLUS 12 MONTHS ON SITE FREE REPAIRS and 90 DAY TECHNICAL HELPLINE
- ★ Next Day Delivery by Courier

"YOU CAN'T GO WRONG WITH THESE PC's"

PRICES:

- PC10 STARTER KIT** with one 5 1/4" DISK DRIVE
- with MONO SCREEN£529.00 + VAT (£608.35 inc VAT)
 - with COLOUR SCREEN£679.00 + VAT (£780.85 inc VAT)
- PC10 STARTER KIT** with TWO 5 1/4" DISK DRIVES
- with MONO SCREEN£579.00 + VAT (£665.85 inc VAT)
 - with COLOUR SCREEN£729.00 + VAT (£838.85 inc VAT)
- PC20 STARTER KIT** with One 5 1/4" Drive and 20MB HARD DISK
- with MONO SCREEN£759.00 + VAT (£872.85 inc VAT)
 - with COLOUR SCREEN£899.00 + VAT (£1033.85 inc VAT)
- PC30 STARTER KIT** with One 3.5 DISK DRIVE and 20MB HARD DISK(80286-AT COMPATIBLE)
- with MONO SCREEN£1099 + VAT (£1263.85 inc VAT)
 - with COLOUR EGA SCREEN£1299 + VAT (£1493.85 inc VAT)

★ **VERY HIGH RESOLUTION VGA MONO AND COLOUR OPTIONS ALSO AVAILABLE**

PERIPHERALS

- PC MOUSE£30.39 + VAT = £34.95
- 1402 MONO MONITOR 12"£80.00 + VAT = £92.00
- 1084S 14" STEREO COLOUR MONITOR£233.91 + VAT = £269.00
- 1403 MONO MONITOR 14" VGA HIGH RESOLUTION£99.13 + VAT = £114.00
- 14" COLOUR MONITOR VGA HIGH RESOLUTION£312.17 + VAT = £359.00
- 14" PHILIPS 8833 STEREO COLOUR MONITOR£225.22 + VAT = £259.00

ATARI MONITORS

- ATARI SM124 MONO MONITOR£86.09 + VAT = £99.00
- ATARI SC1224 COLOUR MONITOR£225.22 + VAT = £259.00
- PHILIPS 8833 COLOUR MONITOR£225.22 + VAT = £259.00

ALL MONITORS INCLUDE LEADS

AMIGA 2000

**IBM PC AND AMIGA COMPATIBLE
TWO COMPUTERS FOR THE PRICE
OF ONE!**

**£1229.00 (Inc VAT and next day delivery)
(£1068.70 exc. VAT)**

FEATURES

- ★ Separate keyboard & System Unit
- ★ 1 Megabyte RAM - expandable
- ★ Built-in 3.5 Disk Drive loads Amiga Software
- ★ Built-in 5.25 Disk Drive loads IBM Software
- ★ Built-in 20MB Hard Drive stores IBM & Amiga Software
- ★ 4096 Colours & Digital Stereo Sound
- ★ Runs IBM software with built-in XT Bridgeboard
- ★ IBM and Amiga Expansion Slots

ATARI 1040STE BUSINESS PACK

**£449.00 (Inc VAT and next day delivery)
(£390.43 exc. VAT)**

★ Includes the new 1 megabyte 1040STE keyboard plus over £200 worth of business software including WORD UP wordprocessing software, featuring glossary and mail merge, K-Spread 3.0 spread sheet and SUPERBASE PERSONAL Database software. Also includes Metacomco BASIC, Mouse Pad, all leads, Manuals and Mouse

ATARI MEGA 1 BUSINESS PACK

**£529.00 (Inc VAT and next day delivery)
(£460.00 exc. VAT)**

FEATURES:

- ★ Separate Keyboard and System Unit
- ★ Inc. all software supplied with 1040 STE Business Pack
- ★ Blitter chip installed for faster graphics

ATARI MEGA 2 BUSINESS PACK

**£829.00 (Inc VAT and Delivery)
(£720.87 Exc VAT)**

- ★ Includes 2 Megabyte Memory System Unit & Keyboard
- ★ Supplied with BUSINESS PACK OR PRO-24E MIDI MUSIC SOFTWARE WHICHEVER YOU PREFER

ATARI MEGA 4 BUSINESS PACK

**£1129.00 (Inc VAT and Delivery)
(£981.74 Exc VAT)**

- ★ Includes 4 Megabyte Memory System Unit & Keyboard
- ★ As with Mega 2 System, you choose between BUSINESS PACK & MIDI MUSIC SOFTWARE

PRINTERS

- STAR LC10 MONO 9 PIN PRINTER£146.96 + VAT = £169.00
- STAR LC10 COLOUR 9 PIN PRINTER£190.43 + VAT = £219.00
- STAR LC24 PIN LETTER QUALITY PRINTER£216.52 + VAT = £249.00
- CITIZEN 120D 9 PIN MONO PRINTER£120.87 + VAT = £139.00

ALL PRINTERS INCLUDE CABLES

CREDIT CARD ORDERLINE • 0908 378008 (Mon - Sat 10am - 6pm)

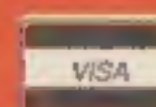
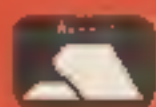
To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to: Digicom Computer Services and send it with your order to the address below. Callers are also most welcome at the address below.

DIGICOM COMPUTER SERVICES LTD

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES, MK2 2AZ.

All prices include VAT and delivery by courier

Licensed Credit Brokers - Written quotation on request APR 34.5% Variable.



Want to know where to key into up-to-the minute computer news and information?

W R I T E H E R E

*I'd like all the latest news and information at my fingertips -
please send me my **FREE** copy of the Micronet brochure.*

Name _____ Age _____

Address _____

Tel No _____

Machine type _____ **SNE2**

FREE MODEM * If you pay for a year's subscription in advance
we'll give you a modem free when you join.

Send the coupon now to: MICRONET, P.O. Box 1351, London, NW2 7HZ.
OR phone **FREE** on 0800 200 700 for your **FREE** Micronet brochure.

› Micronet's up-to-the minute hardware and software
news, reviews and features will keep you right **up to
date**.

› Micronet lets **you** talk to thousands of other
members, hold conferences and send **electronic mail**,
telex and fax.*

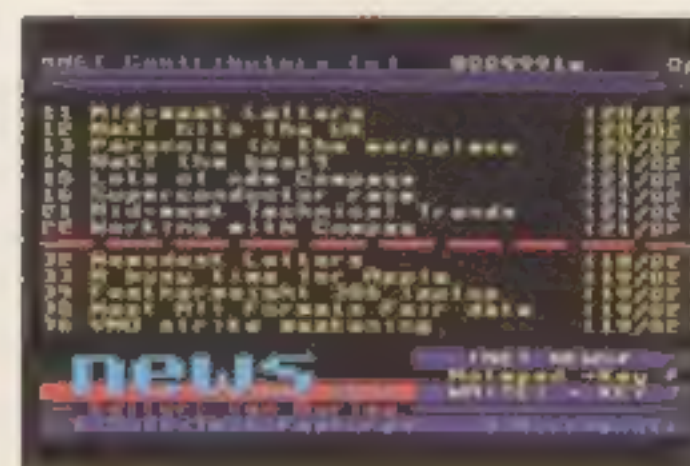
› You can download the programs of your choice
from our constantly expanding selection of **FREE**
software programs.

› **Direct access** to the huge **Prestel** database gives
you a wide **variety** of on-line information from
motorway news to arts reviews.

› And if you feel like a little **entertainment**,
Micronet gives you access to the **best** on-line interactive
multi-user games.

› When you join, your **FREE** comprehensive
welcome pack tells you all you need to know, and
quarterly mailed copies of **LOG ON**, the Micronet
members' magazine, will keep you up to date and in
touch.

› From about **25p per day** (plus local phone
charges*), this is an offer that shouldn't be missed - **get
in touch now** for full details.



**FREE
DEMONSTRATION**

Using a
modem and view-
data software, dial 0272
250000 using the ID
4444444444 and password
4444, for a Micronet
demonstration - you can look up
a local phone no. once on-line.

In touch. Informed. In a word ...

MICRONET

* FAX is an optional extra via the INTERLINK gateway. Cheap rate local phone charges are less than 1p per minute inclusive of VAT.
Free modem offer available in the UK only to new members while stocks last.